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Management of tunas in the Indian Ocean: a study of Kenya's implementation of international and regional conservation and management measures for Tuna

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**MANAGEMENT OF TUNAS IN THE INDIAN OCEAN: A STUDY OF
KENYA'S IMPLEMENTATION OF INTERNATIONAL AND REGIONAL
CONSERVATION AND MANAGEMENT MEASURES FOR TUNA**

A thesis submitted in fulfilment of the requirements
for the award of the degree of

Doctor of Philosophy

from

University of Wollongong

by

Jane Rowena Mbendo, BSc (Baraton, Kenya), MSc (Warwick-UK)

**Australian National Centre for
Ocean Resources and Security (ANCORS)
Faculty of Law
University of Wollongong**

2011

Certification

I, **Jane Rowena Mbendo** declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Australian National Centre for Ocean Resources and Security (ANCORS), Faculty of Law, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Jane R. Mbendo

28 March 2011

Abstract

The 1982 United Nations Convention on the Law of the Sea (LOS) granted significant access to fisheries resources to coastal States in their exclusive economic zones (EEZ), including tuna. As tuna is a highly migratory species, international law requires that States cooperate for the effective management of tuna stocks. The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement) provides the framework by which such cooperation is to be achieved. The coastal and Island States of the Indian Ocean including Kenya, achieve the cooperative management of tuna through the Indian Ocean Tuna Commission (IOTC).

As a beneficiary of the EEZ regime, Kenya has declared sovereign rights over the fisheries resources in its EEZ. In recent years, because of the potential of the tuna resources in its EEZ, Kenya has expressed its aspirations to develop these resources. Kenya's sovereign rights over the tuna resources in its EEZ are subject to relevant rules of international law. The LOS confers upon Kenya management and conservation responsibilities as well as the residual duty to promote the optimum utilisation of its tuna resources. The significance of Kenya's regulatory regime for conserving and managing tuna resources in its EEZ is exemplified by the LOS and the UN Fish Stocks Agreement.

This thesis analyses Kenya's legal and policy framework relative to the management and conservation of the tuna resources in Kenya's jurisdiction, to ascertain the consistency of this framework with the international and regional legal requirements. This will require an examination of the relevant international and regional legal requirements relative to the utilization of tuna and an analysis of the extent to which Kenya has met its international and regional commitments.

Ultimately, this thesis argues that Kenya has not fully adopted measures consistent with its international and regional obligations for the sustainable utilization of tuna, and that Kenya's current legal and policy framework does not adequately address the long-term sustainability of its tuna resources. This thesis will aid in the construction of recommendations for the review and reform of Kenya's legal and policy framework. These recommendations will include the formulation of a tuna management plan

calculated to enhance the management of, and benefits derived from Kenya's tuna fisheries. This thesis explores various options for the optimum utilisation of Kenya's tuna resources, with a view to fostering the sustainable development of Kenya's tuna fisheries. In developing an appropriate framework for the sustainable development of its tuna resources, Kenya will necessarily require provisions and commitments that ensure the effective management and conservation of the tuna resources in its EEZ.

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*To Peter, Michelle and Georgie,
For enduring the absence of a wife and
mother for a prolonged period of time*

*To The memory of my father - Mr. Alexander
Chimungeni,
mother -Mrs. Loice Chimungeni
and brother -Paul Omuttimo*

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List of Acronyms

| | |
|-----------|---|
| ACP | African, Caribbean and Pacific |
| AFIPEK | Association of Fish Processors and Exporters of Kenya |
| APFIC | Asia-Pacific Fishery Commission |
| AU | African Union |
| CARIFORUM | Caribbean Forum for African, Caribbean and Pacific States |
| CCAMLR | Commission for the Conservation of Antarctic marine Living Resources |
| CCSBT | Commission for the Conservation of Southern Bluefin Tuna |
| CECAF | The Fishery Committee for the Eastern Central Atlantic |
| CEMAC | Economic and Monetary Community of Central Africa |
| CFP | Common Fisheries Policy |
| COFI | The Committee of Fisheries |
| CPA | Cotonou Partnership Agreement |
| CPC | Cooperating non-Contracting Parties |
| DFQF | Duty-Free and Quota-Free |
| DFRD | District Focus for Rural Development |
| DG | Director General |
| DWFN | Distant Water Fishing Nation |
| EAC | East African Community |
| EBA | Everything –But- Arms |
| EC | European Community |
| ECOWAS | Economic Community of West African States |
| EDF | European Development Fund |
| EEC | European Economic Commission |
| EEZ | Exclusive Economic Zone |
| EMCA | Environmental Management and Coordination Act |
| EPA | Economic Partnership Agreement |
| ERS | Economic Recovery Strategy |
| ESA | Eastern and Southern African |
| EU | European Union |
| FAD | Fish Aggregating Device |
| FAO | Fish and Agricultural Organisation of the United Nations |

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| FPA | Fisheries Partnership Agreement |
| GATT | General Agreement on Tariffs and Trade |
| GDP | Gross Domestic Product |
| GSP | Generalized System of Preferences |
| IATTC | Inter-American-Tropical-Tuna-Commission |
| IBRU | International Boundaries Research Unit |
| ICCAT | International Commission for the Conservation of Atlantic Tunas |
| ICDC | Industrial Credit Development Corporation |
| ICTSD | International Centre for Trade and Sustainable Development |
| IMF | International Monetary Fund |
| IOC | Indian Ocean Commission |
| IOTC | Indian Ocean Tuna Commission |
| IOFC | The Indian Ocean fishery Commission |
| IUU | Illegal, Unregulated and Unreported Fishing |
| LOSC | Law of the Sea Convention |
| MCS | Monitoring, Control and Surveillance |
| MOU | Memorandum of Understanding |
| MSY | Maximum Sustainable Yield |
| PRSP | Poverty Reduction Strategy Paper |
| RFMO | Regional Fisheries Management Organisation |
| SIDs | Small Island Developing States |
| TAC | Total Allowable Catch |
| UK | United Kingdom |
| UN | United Nations |
| UNCED | United Nations Conference on Environment and Development |
| UNCLOS | United Nations Convention on the Law of the Sea |
| USA | United States of America |
| VMS | Vessel Monitoring System |
| WCPFC | Western and Central Pacific Fisheries Commission |
| WIO | Western Indian Ocean |

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| WIOTO | Western Indian Ocean Tuna Organisation |
| WTO | World Trade Organisation |

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Book Chapter

Jane Mbendo and Martin Tsamenyi, *Regional Cooperation: A Case Study of the Western Indian Ocean tuna Fisheries* (2009) in Rumley Dennis, Sanjay Chaturvedi and Vijay Sakhuja (eds.), *Fisheries Exploitation in the Indian Ocean: Threats and Opportunities* 280-297.

Papers Presented

Jane Mbendo and Martin Tsamenyi, *Regional Cooperation: A Case Study of the Western Indian Ocean tuna Fisheries*. Paper presented at the Fourth Annual Conference of the Indian Ocean Research Group (IORG4) Symposium on Marine Biodiversity and Fisheries in the Indian Ocean Region: Opportunities and Threats, Oman, 18-20 February 2007.

Jane Mbendo, *Challenges of Managing Tuna in the Western Indian Ocean*. Paper presented at the First International Symposium on Climate Impacts on Oceanic Top Predators (CLIOTOP), La Paz, Mexico, 3-7 December 2007.

Jane Mbendo, *Improving benefits from sustainable tuna fisheries management in the Western Indian Ocean region*. Paper presented at the Symposium on Coping with Global Change in Marine Socio-ecological Systems, FAO, Rome, Italy, 8-11 July 2008.

Jane Mbendo, *Implementing International Instruments in Conservation of Sea Turtles of the Western Indian Ocean Region*. Paper presented at the 29th Symposium on Sea Turtle Biology and Conservation, Brisbane, Australia, 17-19 February 2009.

Jane Mbendo, *Data requirements for sustainable management of tuna fisheries under international law: Issues for Indian Ocean Developing Coastal States*. Paper presented at the Fishery Dependent Information Conference, Galway, Ireland, August 23-26

Other Conferences Attended

Fisheries Economics Management and Tuna Management Workshop for the Pacific Islands, the Australian National University, Canberra, 25-26 September 2006.

Delegate and Assistant Moderator, Indian Ocean Maritime Security Symposium, Australian Defence College, Canberra, Australia, 15-17 April 2009.

CHAPTER 1

INTRODUCTION

The nature of coastal State sovereignty was dramatically changed by the establishment of the exclusive economic zone (EEZ). The concept of the EEZ was established with the adoption of the United Nations Convention on the Law of the Sea (LOSC)¹ in 1982.² The EEZ concept which is considered one of the most significant outcomes of the Third United Nations Conference on the Law of the Sea (UNCLOS III), has been described as “one of the most far-reaching institutional changes in the international society of the twentieth century”.³ Ultimately, the adoption of the EEZ changed the scope and range of human use of ocean resources. What was previously a “vast ocean area” containing “an enormous wealth of natural resources” and forming a part of the high seas has now been transferred to coastal States’ assets.⁴

The establishment of the EEZ was motivated by the socio-economic interests that States had in the resources of this zone, particularly fish stocks.⁵ It is estimated that over 90% of all presently commercially exploitable fish stocks are encompassed by the EEZ.⁶ Thus, the legal regime of the EEZ is of fundamental importance. The EEZ concept is a representation of the philosophy of the developing States,⁷ signifying a departure from the doctrine of *the freedom of the high seas* which had prevailed in the

¹ *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982, 1833 UNTS 3 (entered into force 16 November 1994). Hereinafter referred to as the LOSC.

² M Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 14; R R Churchill and A V Lowe, *The Law of the Sea* (Manchester University Press, first published, 1983, 3rd ed, 1999 ed) 160. For the origins and development of the concept of the EEZ, see Francisco Orrego Vicuna, *The Exclusive Economic Zone: Regime and Legal Nature Under International Law* (Cambridge University Press, 1989) 3-15; David Joseph Attard, *The Exclusive Economic Zone in International Law* (Oxford University Press, 1987) 1-31; Barbara Kwiatkowska, *The 200 Mile Exclusive Economic Zone in the New Law of the Sea* (Martinus Nijhoff Publishers, 1989) 1-37. Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 67-91.

³ Alf Hakon Hoel, Are K Sydnes and Syma A Ebbin, ‘Ocean Governance and Institutional Change in Ebbin A Syma, Alf Hakon Hoel and Are K Sydnes (eds), *A Sea of Change: The Exclusive Economic Zone and Governance Institutions for Living Marine Resources* (Springer Publications, 2005) 3.

⁴ Ibid.

⁵ R R Churchill and A V Lowe, *The Law of the Sea* (Manchester University Press, first published, 1983, 3rd ed, 1999 ed) 2.

⁶ Ibid 162. Other resources in the EEZ include about 87% of the world’s submarine oil deposits, and 10% of manganese nodules. Further, the EEZ is an important area for scientific research, and shipping routes.

⁷ M Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 14.

customary conception of the law of the sea under traditional maritime law.⁸ The interest of developing States to attain jurisdiction over the EEZ was evident from their assertion during the negotiations that led to the adoption of the EEZ concept. The developing coastal States of Asia, Africa and Latin America were instrumental in contributing to this concept.⁹

The African States took a central position regarding the establishment of the EEZ, and were particularly instrumental in advocating for the extension of coastal State jurisdiction, in order to address their concerns. These States made immense contributions to the evolution, articulation, development and concretisation of the EEZ concept through their proposals, submissions and negotiations prior to, and during UNCLOS III.¹⁰ The developing coastal States had two major issues of concern. First, these States desired to have priority to the utilisation of the resources in the EEZ.¹¹ Secondly, they claimed sovereignty over these resources and wanted to have stricter controls over the terms and modalities of the participation of third parties in the EEZ.¹² Their concerns were influenced by the fishing activities of distant water fishing States, whose operations the African coastal States felt defied sound conservation practices.¹³ Other factors that influenced their concerns were; the demand for food and industrial commodities; the impact of technology on the environment and on the coastal States; and the threat to the environment from abusive uses of the sea.¹⁴ It was felt that the fishing activities of distant water fishing States were damaging in the long-term. For

⁸ Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 44.

⁹ See, R R Churchill and A V Lowe, *The Law of the Sea* (Manchester University Press, first published, 1983, 3rd ed, 1999 ed) 288; D J Attard, *The Exclusive Economic Zone in International Law* (Oxford University Press, 1987) 21; Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone: The Case of EEZ Proclamations, Maritime Boundaries and Fisheries* (Transaction Publishers, 1998) 4. The Latin American and African States contributed significantly to the evolution of the EEZ.

¹⁰ Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone: The Case of EEZ Proclamations, Maritime Boundaries and Fisheries* (Transaction Publishers, 1998) 4.

¹¹ Ibid.

¹² Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 72; Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone: The Case of EEZ Proclamations, Maritime Boundaries and Fisheries* (Transaction Publishers, 1998) 4.

¹³ Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 68.

¹⁴ Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone: The Case of EEZ Proclamations, Maritime Boundaries and Fisheries* (Transaction Publishers, 1998) 4.

these reasons, Several African States advocated that the coastal State should have an EEZ extending 200 nautical miles, adjacent to its territorial sea.¹⁵

The concept of the EEZ was formally articulated by the Kenyan delegate, Mr. Frank Njenga who was dubbed the architect of the concept.¹⁶ Mr. Njenga emphasised the need for the international law of the sea to take care of the interests of developing States and summed up the utility of the EEZ as follows:

The economic exclusive zone concept offers a good basis for resolving the impasse between those who believe in a narrow and those who believe in a broad belt of territorial sea. Basically, the purpose of the EEZ concept is to safeguard the economic interests of the coastal States in the waters and seabed adjacent to their coasts without unduly interfering with other legitimate uses of the sea by other States.¹⁷

By advancing the concept of the EEZ, it was hoped that the competition for resources of the EEZ between developing coastal States and distant fishing water nations (DWFNs) would be reduced, and that developing coastal States would be able to utilise the resources in the EEZ accordingly.¹⁸ In essence, the EEZ concept sought to give all States equal opportunities to access the living resources of the EEZ for economic reasons and also to protect the marine environment.¹⁹ For many States, mainly the developing coastal States, the rights to the EEZ present an opportunity for them to gain economically from utilising the living resources therein.²⁰ As a strong advocate in favour of the establishment of the EEZ, Kenya proclaimed its EEZ in 1979.²¹

¹⁵ Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 69.

¹⁶ The proposal put forward by Kenya's Mr. Frank Njenga viewed the EEZ concept as a solution to the conflict of interests between developed and developing States in the utilisation of the sea. In connection with this proposal, the 'Draft Articles on an Exclusive Economic Zone Concept' was submitted at the 1972 Geneva Session of the United Nations Sea-Bed Committee whose task was to prepare the UNCLOS III. See Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 73.

¹⁷ Tayo O Akintoba, *African States and Contemporary International Law: A Case Study of the 1982 Law of the Sea Convention and the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1996) 107.

¹⁸ Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone: The Case of EEZ Proclamations, Maritime Boundaries and Fisheries* (Transaction Publishers, 1998) 9.

¹⁹ M Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 18.

²⁰ R R Churchill and A V Lowe, *The Law of the Sea* (Manchester University Press, first published, 1983, 3rd ed, 1999 ed) 160.

²¹ FAO, Fishery country Profile-The Republic of Kenya, <http://www.fao.org> (accessed 23 March 2009).

The fish stocks in the EEZ are among the most significant living resources of economic importance to coastal States. Tuna is one of the key fisheries resources of the EEZ. Its high economic value makes tuna significant in international fisheries trade.²² “About 65% of all tuna taken is captured within 200 miles off shore”, most of it within the EEZ of developing coastal States.²³ Like all other living resources of the EEZ, tuna resources are subject to the rules of international law. The international instruments governing tuna fisheries include the LOSC and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UN Fish Stocks Agreement).²⁴ Additionally, the FAO Code of Conduct for Responsible Fisheries (FAO Code of Conduct)²⁵ supplements the provisions of these instruments.

The Indian Ocean has been impacted by the increase in the global demand for tuna since the 1980s. With the increased demand, a significant amount of the fishing effort shifted from the Atlantic Ocean to the Indian Ocean.²⁶ Tuna fishing operations in the Indian Ocean increased rapidly as the purse seine fishery became more efficient.²⁷ Fishing vessels from Spain and France targeting skipjack and yellowfin tuna expanded their operations to the Western Indian Ocean (WIO) region.²⁸ A purse seine fishery was started in the Seychelles in the 1980s by French seiners who had moved from the

²² FAO, *Technical consultation to review progress and promote the full implementation of the IPOA to prevent, deter and eliminate IUU fishing and the IPOA for the management of fishing capacity*, FAO, Rome, Italy, 24-29 June 2004.

²³ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (2003) 50.

²⁴ *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, opened for signature 4 December 1995, 2167 UNTS 88 (entered into force 11 December 2001). Hereinafter referred to as the UN Fish Stocks Agreement.

²⁵ FAO, *Code of Conduct for Responsible Fisheries*, Adopted at the 28th Session of the FAO Conference, Rome, Italy, 31 October 1995. Hereinafter referred to as FAO Code of Conduct.

²⁶ Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical Paper 483 (2007) 17.

²⁷ Makoto Miyake, Naozumi Miyabe, and Hideki Nakano, *Historical Trends of Tuna Catches in the World*. FAO Fisheries Technical Paper 467 (2004) 33.

²⁸ *Ibid.* The WIO commonly refers to the region that comprises the island States of Madagascar, Comoros, Mauritius, Seychelles, Reunion (France) and the Littoral States of Somalia, Kenya, Tanzania, Mozambique and South Africa. The use of the term WIO varies across different studies. In literature these States are also referred to as belonging the South Western Indian Ocean. It is also referred to as Eastern Africa by the Regional seas programme of the United Nations Environment Programme.

eastern Atlantic.²⁹ The longline fishery in the region was dominated by Japan, followed by Taiwan, the Republic of Korea and Indonesia.³⁰ By 2004, 26% of the global landings of tuna were being taken from the Indian Ocean.³¹

Kenya is a coastal State of the Indian Ocean. In recent years, Kenya has expressed its aspirations to develop its tuna fisheries, because of the potential of the tuna resources in its EEZ.³² As tuna resources in the EEZ are subject to the rules of international law, Kenya's regulatory framework for governing tuna needs to articulate Kenya's obligations under international law. This thesis examines Kenya's legislation, policy and practice relating to the management and conservation of the tuna resources within Kenya's jurisdiction, to ascertain the consistency of this framework with the international and regional legal requirements. The thesis proposes measures to address the gaps and limitations in the existing legal and policy framework.

This introductory chapter provides a background to the global importance of tuna, and highlights the sustainability concerns pertaining to its utilization. It also provides an overview of Kenya's tuna fishery and finally outlines the aims, structure and significance of the thesis.

1.1 Global trends in Tuna Fisheries

The demand for tuna which has been increasing significantly since the 1940s, has led to a change from small fleets to large-scale industrial fisheries which have grown rapidly with the development of technology.³³ Consequently, growth in demand has resulted in increased fishing capacity and the large-scale decline of the world's tuna stocks.³⁴ Today, tunas are fished commercially by eighty countries worldwide and the

²⁹ Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical Paper 483 (2007) 17.

³⁰ Ibid 34.

³¹ Ibid.

³² Republic of Kenya, *National Oceans and Fisheries Policy* 2008, Chapter 4(4.2.3) States that; Regarding shared/highly migratory fish stocks, the Government will proactively seek cooperation with other states in the region and Distant Water Fishing Nations (DWF) harvesting these stocks as well as participate in management bodies to ensure the long sustainability of these stocks.

³³ FAO, *Management of tuna fishing capacity: conservation and socio-economics*, Second Meeting of the Technical Advisory Committee of the FAO project, 15-18 March 2004, Madrid, Spain.

³⁴ World Wide Fund for Nature (WWF), *Tuna in trouble: The challenges facing the world's tuna fishery* (WWF, 2007) 4.

size of the world's tuna capacity has become a matter of concern.³⁵ The tuna fishing capacity is also considered to have become excessive.³⁶ This excessive capacity has resulted in overexploitation and in some cases depletion of tuna stocks. It is now evident that 'most stocks of the principal market tunas are nearly fully exploited'.³⁷

The principal market tunas include albacore (*Thunnus alalunga*), skipjack (*Katsuwonus pelamis*), bluefin (*Thunnus thynnus*, *Thunnus orientalis*, and *Thunnus macoyii*), and yellowfin (*Thunnus albacares*).³⁸ The catches of the principal market tunas increased from less than 0.2 million metric tonnes (mt) in 1950 to 4.3 million mt in 2003.³⁹ The tuna catches for 2006 reached the all time maximum of more than 6.4 million mt,⁴⁰ while the 2007 catches totalled approximately 4 million mt.⁴¹ The decline in 2007 was associated with an increase in fuel prices.⁴² The global export value of tuna products is US\$5 billion, while the value of global tuna is 9% of total global fish trade.⁴³ The increasing fishing capacity and international demand for tuna puts the sustainability of global tuna resources at risk.

1.2 Management and Conservation of Tuna

The manner in which tunas are utilised has consequences for its abundance, its habitat, as well as for other species that are associated with or dependent on tuna.⁴⁴ To ensure future supply of tuna, it is necessary to utilize them sustainably. In modern fisheries, the concept of sustainability seeks to ensure both human and ecosystem well-

³⁵ Ibid; James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (2003) 2.

³⁶ FAO, *Management of tuna fishing capacity: conservation and socio-economics*, second meeting of the Technical Advisory Committee of the FAO project, 15-18 March 2004, Madrid, Spain.

³⁷ Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical Paper 483 (2007).

³⁸ World Wide Fund for Nature (WWF), *Tuna in trouble: The challenges facing the world's tuna fishery* (WWF, 2007) 2.

³⁹ Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical Paper 483 (2007).

⁴⁰ FAO, *The State of the World Fisheries 2008* (FAO, 2009) 57.

⁴¹ Fishery Statistical Collections, *Global Tuna Catches by Stock*, <http://www.fao.org> (accessed 23 June 2010).

⁴² FAO, *The State of the World Fisheries 2008* (FAO, 2009) 57.

⁴³ Press Release, http://www.fishersforum.net/press/WPRFMC_Press_release_23April08.pdf (accessed on 27 May 2010).

⁴⁴ Utilisation can be defined generally as the level or rate of use.

being.⁴⁵ Sustainability is viewed broadly to include ecological, economic, social and institutional aspects.⁴⁶ Such a concept would thus ensure preservation of tuna resources, and their supporting ecosystems, equitable distribution of benefits from tuna, economic benefits and an effective governance system.⁴⁷ In order to safeguard and promote the sustainable utilization of tuna and all species associated with or dependant upon tuna, it is necessary to implement an effective fisheries management and conservation policy and legal framework.

The need to utilise tuna resources sustainably is evidenced by the global demand and pressures on these resources. It is entirely important that tuna resources in coastal States be utilised sustainably for the social, economic and ecological benefits they confer to these States currently and in the future. By so doing, the ecological processes of life are maintained to ensure food security and profits from tuna fisheries in the long-term. Tuna fisheries are particularly important to economies of developing coastal States, and in particular for the Island States with limited land-based resources. For example, the Western and Central Pacific Ocean (WCPO) is home to the largest tuna fishery in the world, with an annual catch exceeding 2 million mt.⁴⁸ Tuna plays an important role in the culture, nutrition, welfare, recreation and government revenue of these Pacific Island Countries, as the tuna catches make up to ten times ‘all other types of fish combined’ and the catch is ‘worth over seven times the value of all other Pacific Island fish catches combined’.⁴⁹

1.3 Tuna Fisheries of Kenya

Kenya is situated on the eastern coast of Africa (see Figure 1). Kenya has an area of 590,000km² and is bordered by Somalia to the north and Tanzania to the south.⁵⁰

⁴⁵ FAO, *Indicators for Sustainable Development of Marine Capture Fisheries*, FAO Technical Guidelines for Responsible Fisheries. No. 8 (FAO, 1999) 22.

⁴⁶ Jean-Jaques Maguire, ‘Is Fishery Science Helping to Achieve Sustainability in the North Atlantic?’ in J Swan and D Greboval (eds), *Overcoming Factors of Sustainability and Overexploitation of Fisheries: Selected Papers on Issues and Approaches*. International Workshop on the Implementation of the International Instruments and Factors of Unsustainability and Overexploitation in Fisheries, Siem Reap, Cambodia, 13-16 September 2004. FAO Fisheries Report, No. 782 (FAO, 2005) 85.

⁴⁷ Ibid 85.

⁴⁸ This is approximately 50% of the world tuna catch. See Langley et al, ‘Slow Steps Towards Management of the World’s Largest Tuna Fishery’ (2009) 33, *Marine Policy* 271, 271.

⁴⁹ Robert Gillet, *Tuna for Tomorrow: Some of the Science Behind an Important Fishery in the Pacific Islands*, A report prepared for the Asian Development Bank, August 2005.

⁵⁰ FAO, Fishery country profile, www.fao.org (accessed 31 August 2010).



Figure 1. Map of Kenya⁵¹

Kenya's coastline is approximately 880 km long, with an EEZ entitlement of 230,000 km.⁵² The location and availability of tuna in Kenya's EEZ is affected by two distinct monsoon seasons. The monsoon systems are influenced by the movement of the Inter-Tropical Convergence Zone, a low pressure zone which moves north and south of the equator in relation to the sun.⁵³ The location of the convergence zones are significant in

⁵¹ Source: <http://www.geography-site.co.uk> (accessed 25 July 2010).

⁵² FAO, *Report of the First Session of the Scientific Committee*. Fisheries Report No. 806 (2006) 4.

⁵³ Malleret-King et al, *Understanding Fisheries Associated Livelihoods and the Constraints to their Development in Kenya and Tanzania: Review of Marine Fisheries Resources for Kenya* (2003) 15,

determining the location and abundance of tuna because; “the convergences are the areas of concentration of forage biomass for high trophic level species as well as drifting debris which have an aggregative effect on tuna species”.⁵⁴ The physical and biological aspects of the Kenya coast such as the dispersal and recruitment of species are influenced by the East African Coastal current, the South Equatorial current, Equatorial counter current and the Somali current (see Figure 2).⁵⁵

These currents greatly influence the distribution and migration patterns of pelagic species like tuna along the coast of Kenya, creating high and low seasons of availability. This in turn determines the activity of fishing vessels along the Kenya coast as they pursue the tuna stocks during the different seasons. For example, large concentrations of tuna are found along the east African coast, mainly during the season dominated by the southeast monsoon. The tuna migration is influenced by the South Equatorial current, compelling the tuna movement towards the west and the north, while concentrating food resources to feed the stocks.⁵⁶

Project Report for the UK Department for International Development, <http://www.onefish.org/servelet> (accessed 25 July 2010).

⁵⁴ B Stequert and F Marsac, *Tropical Tuna-Surface Fisheries in the Indian Ocean*, FAO Fisheries Technical Paper 282 (FAO, 1989)46.

⁵⁵ Mika Odido, *Marine Science Country Profiles-Kenya*, 1998, A report for the Intergovernmental Oceanographic Commission and Western Indian Ocean Marine Science Association.

⁵⁶ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

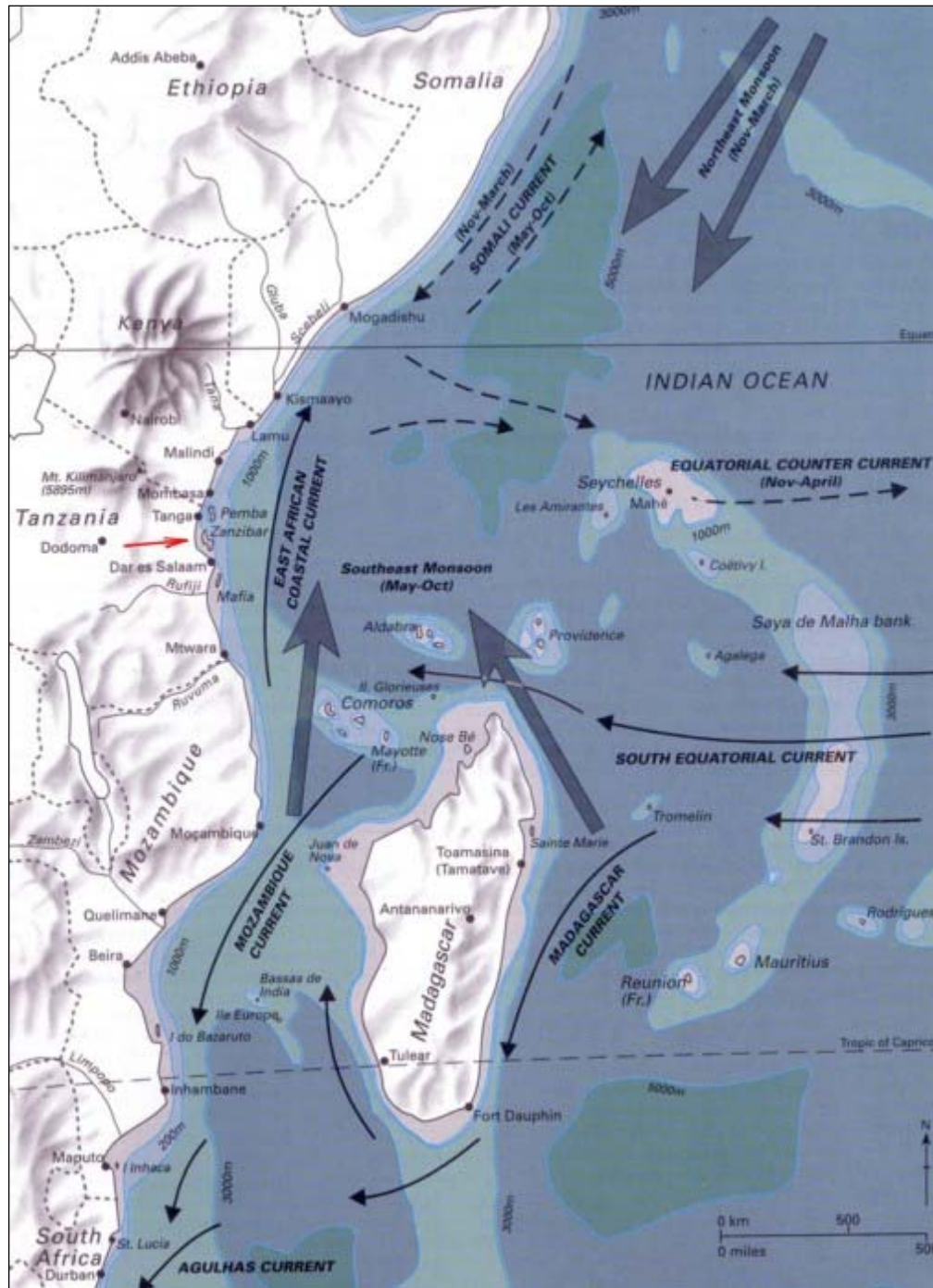


Figure 2. Kenya Coastal Currents⁵⁷

Tuna are therefore mostly abundant in July and August, during which time the fishing activities are highest (See Figure 3). This is the time for which a large proportion of the purse seine fleets seek fishing licenses. Their catch records also reflect

⁵⁷ Source: <http://www.theissresearch.org/scientists/theiss/zanzibar/overview.jpg> (accessed 25 July 2010).

highest catches during these months.⁵⁸ These migratory movements of tuna along the east coast of Africa and the adjacent island States of the WIO are represented in figure 3.

The WIO is one of the relatively important fishing grounds for skipjack and a principal fishing ground for yellowfin and bigeye tuna after Western and Central Pacific Ocean and the Eastern Pacific Ocean respectively.⁵⁹ Observations from tuna tagging programs of the Indian Ocean have established that all three species of tuna migrate across the entire Western Indian Ocean region,⁶⁰ and that they are each represented by a single stock in the entire Indian Ocean.⁶¹

⁵⁸ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

⁵⁹ William H Bayliff, Juan Ignacio de Levia Moreno and Jacek Majkowski (eds), *Management of Tuna Fishing Capacity: Conservation and Socio-economics* (FAO, 2005). Second Meeting of the Technical Advisory Committee of the FAO project, 15-18 March 2004, Madrid, Spain.

⁶⁰ Alain Fonteneau, Report on *Tuna Movement Patterns Presently Shown in the Indian Ocean by Tag Recoveries from the IOTTP Tagging Program* (2008). The most recent tuna tagging program was carried out between August 2005 and September 2007. <http://www.iotc.org> (accessed 21 April 2010).

⁶¹ William H Bayliff, Juan Ignacio de Levia Moreno and Jacek Majkowski (eds), *Management of Tuna Fishing Capacity: Conservation and Socio-economics* (FAO, 2005). Second Meeting of the Technical Advisory Committee of the FAO project, 15-18 March 2004, Madrid, Spain.

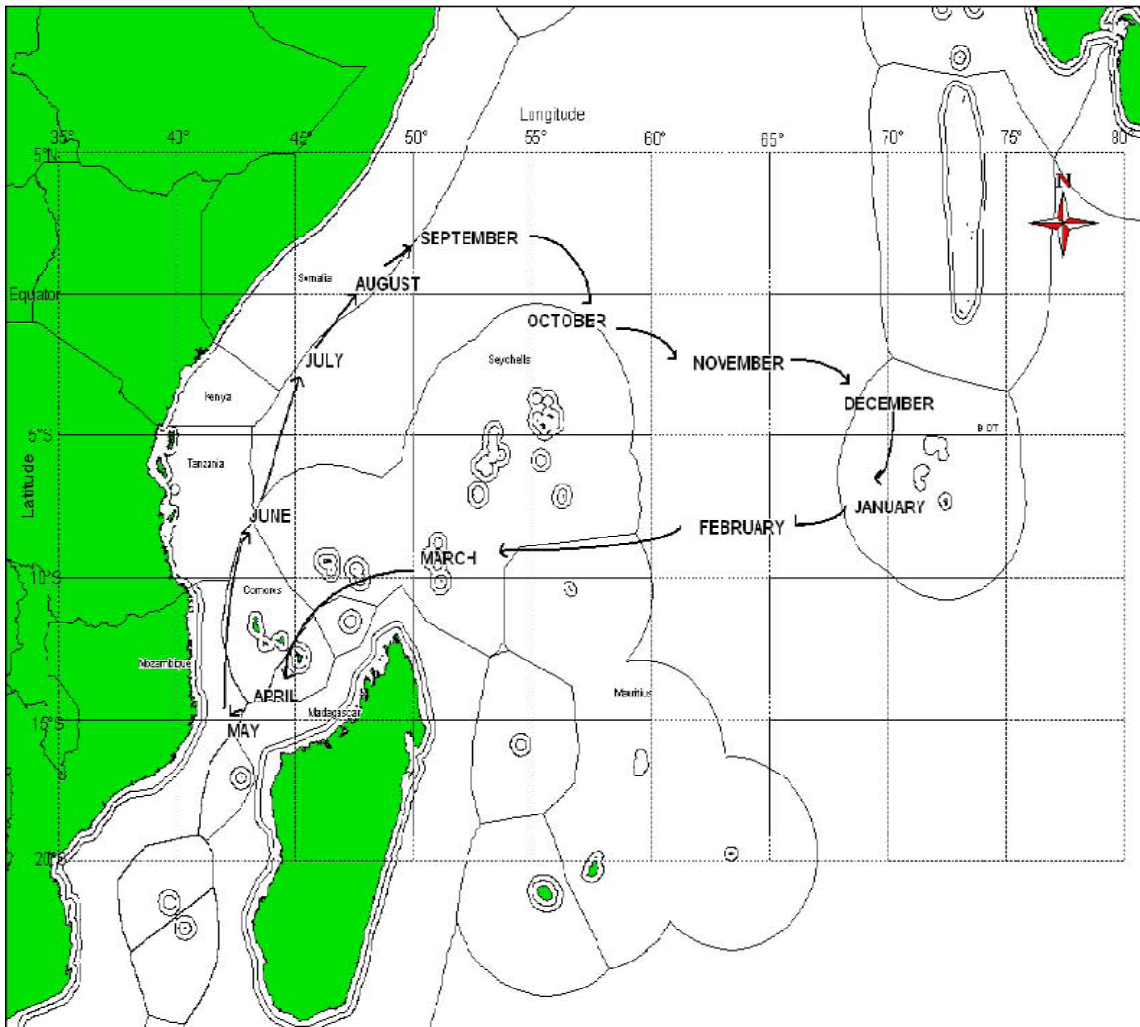


Figure 3. Migratory Movements of Tuna in the WIO⁶²

Kenya's EEZ is considered to have valuable tuna resources owing to its location within the richest tuna belt in the Indian Ocean.⁶³ However, Kenya's domestic capacity to harvest the tuna resources in its EEZ is limited, as it lacks the financial and institutional capability, and the expertise to participate in the tuna fishery.⁶⁴ Thus Kenya is dependent on foreign fishing access to derive financial benefits from the tuna resources in its EEZ.⁶⁵ Only two longline vessels have been flagged to Kenya since

⁶² Source: G. Parkes, IUU Fishing, May 2007 (accessed 25 July 2010).

⁶³ Stephen Mbithi Mwikya, Report on *Kenya-EU fishery agreement: critical aspects and negotiating positions* (2004).

⁶⁴ Oceanic Development, Megapesca Lda (2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

⁶⁵ Nancy Gitonga and Robin Achoki, 'Fiscal Reforms for Kenya Fisheries' in Stephen Cunningham and Tim Bostock (eds), *Papers Presented at the Workshop and Exchange of Views on Fiscal Reforms for*

2005.⁶⁶ The target species for the vessel which is currently operational are swordfish and sharks.⁶⁷ The only tuna processing enterprise in Kenya is dependant upon imports from the Distant Water Fishing Nations (DWFNs) operating in its EEZ for raw materials.⁶⁸ Foreign access to Kenya's tuna resources has been regulated through direct licensing since 1996 to date.⁶⁹

At least thirty-three purse seines and thirty to forty-five longliners have been licensed consistently by the Department of Fisheries to fish in Kenya's EEZ on an annual basis.⁷⁰ Most of these vessels are European and Asian, targeting skipjack, yellowfin and bigeye tuna.⁷¹ Most of the purse seines are from Spain, while the longliners are mostly Taiwanese.⁷² Other States whose fishing vessels have been consistently licensed to fish in Kenya's EEZ include Netherlands and Belize.⁷³ Since 2008 the numbers of foreign fishing vessels licensed to operate in Kenya's EEZ has dropped dramatically to only 29 (20 purse seiners and 9 longliners), while in 2009 they dropped further to 22 (2 purse seiners and 20 longliners).⁷⁴ These changes have been attributed to the insecurity problem in the western Indian Ocean region caused by the piracy off the coast of Somalia.⁷⁵

Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management, Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

⁶⁶ Republic of Kenya, *National Reports of Kenya on Tuna Fishery* 2008, 2009 and 2010; Edward Kimakwa, *Proceedings of the WWF-AU Expert Consultations on Sustainable Management of Tuna and other Highly Migratory Resources in South West Indian Ocean Coastal States* Nairobi, Kenya 17-18 December 2009.

⁶⁷ Republic of Kenya, *National Reports of Kenya on Tuna Fishery* 2007.

⁶⁸ Oceanic Development, *Rules of Origin in Preferential Trade Arrangements: New Rules for the Fishery Sector* (2007) 30.

⁶⁹ Marine Resources Assessment Group Ltd. (MRAG), *Control of Foreign Fisheries*, Workshop Report Dar es Salaam 14-15 November 2005.

⁷⁰ Republic of Kenya, *National Reports of Kenya on Tuna Fishery* 2007; Ingrid Ardjosoediro and David Neven, *The Kenya Capture Fisheries Value Chain: An AMAP-FSKG Value Chain Finance Case Study*, USAID Micro Report No.122, (USAID, 2008).

⁷¹ Republic of Kenya, *National Reports of Kenya on Tuna Fishery* 2007; Mathias Wafula and Beth Wagude, *Overview of Kenya's Marine Fisheries*, Report for ESA Meeting on Trade and Sustainable Approaches to Fisheries Negotiations under WTO/EPA, Port Louis, Mauritius, 2-4 May 2007.

⁷² Republic of Kenya, *National Reports of Kenya on Tuna Fishery* 2007.

⁷³ MRAG, *Control of Foreign Fisheries*, Workshop Report Dar es Salaam 14-15 November 2005.

⁷⁴ Edward Kimakwa, *Proceedings of the WWF-AU Expert Consultations on Sustainable Management of Tuna and other Highly Migratory Resources in South West Indian Ocean Coastal States* Nairobi, Kenya 17-18 December 2009.

⁷⁵ Ibid. The fishing States operating in Kenya's EEZ include Spain, Japan, France, China and Indonesia.

The annual fishing license fee for purse seiners to secure access to the Kenyan EEZ is US\$50,000 per vessel. This fee has recently been adjusted from US\$ 20,000 in 2009.⁷⁶ The license fee structure for longliners differs slightly from that of purse seiners. The longline fishing license fee is reliant upon the duration of the fishing operations of such vessels. This fee has equally been revised from the previous US\$5,000 per month to US\$10,000; from US\$7,000 for three months to US\$20,000; and from US\$12,000 for twelve months to US\$30,000.⁷⁷ Clearly, this fishing license fee increase is an indication that Kenya has a desire to realise better financial gains from its tuna fisheries. These license fees, which had not been previously adjusted since 1991,⁷⁸ are considered very low.⁷⁹ It is evident that Kenya does not derive commensurate return from the licenses issued to foreign fishing vessels in exchange for its tuna.⁸⁰

For example, the total license fees received by Kenya in 2005 were US\$840,000. This amount ‘represents 1.4% of the value of the estimated 60,000 tonnes of tuna obtained from Kenyan waters’ annually. This amount of tuna would fetch ‘more than US\$60 million at first sale’.⁸¹ Compared to the annual license fee of over US\$ 90,000 charged by Seychelles, the Kenyan sum of US\$20,000 was a very small sum.⁸² Foreign fishing fleets are also required to pay royalties set as a percentage of the landed catch.

⁷⁶ Republic of Kenya, Law Reports, The Fisheries (Foreign Fishing Craft)(Amendment) Regulations, 2009, Section 2(a)(ii). http://www.kenyalaw.org/kenyalaw/klr_app/frames.php (accessed 16 January 2010).

⁷⁷ Republic of Kenya, Law Reports, The Fisheries (Foreign Fishing Craft)(Amendment) Regulations, 2009, Section 2(a)(i); Mathias Wafula and Beth Wagude, *Overview of Kenya’s Marine Fisheries*, Report for ESA Meeting on Trade and Sustainable Approaches to Fisheries Negotiations under WTO/EPA, Port Louis, Mauritius, 2-4 May 2007; S. M. Mwikya, *Kenya-EU Fishery Agreement: Critical Aspects and Negotiating Positions*, 2004, Technical Report for the Ministry of Trade.

⁷⁸ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

⁷⁹ In the words of the Chairman of the Kenya Association of Sea Anglers, Simonit Hemphill; “commercial firms have been licensed for a pittance to fish in Kenya’s EEZ”. See the Standard Newspaper 09/02/2007.

⁸⁰ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

⁸¹ Oceanic Development, Megapesca Lda (2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

⁸² George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

However, very little if any royalties are recovered.⁸³ According to a report by the UK Department for International Development, the demand for foreign access to Kenya's tuna fishery is an indication that there is still a significant resource that warrants the investment of DWFNs. Nevertheless, the UK Department emphasizes the need for Kenya to achieve better compliance with the data reporting provisions it has put in place in the terms and conditions for licensing.⁸⁴

The review of the license fees being levied upon foreign fishing vessels in 2009 was long overdue. As foreign vessels have been fishing under license since 1991, there is no doubt that this delay has caused economic losses to Kenya in respect of government revenue. Furthermore, the fishing license fees still remain low even at the current level. Kenya needs to derive commensurate return from the fishing license fee if it is to meet its economic objectives for providing foreign access to its tuna resources.

Although the participation of DWFNs targeting tuna in Kenya's EEZ appears to be an opportunity for Kenya to derive economic benefits from its tuna resources, most of the catches are landed and processed outside the region.⁸⁵ The tuna resources in Kenya's EEZ are potentially significant, with DWFNs catching up to an estimated 60,000 tonnes annually as the seasonal migration passes through the Kenyan EEZ,⁸⁶ with very minimal domestic landings. The fishing vessels rarely, if ever report their respective catches to the designated national authorities so that information regarding the composition of the species, the quantity of tuna caught, the sources of the catches and the times of the catches is scarce.⁸⁷ Considering Kenya's lack of capacity to monitor and control the fishing activities in its EEZ, illegal fishing activities and underreporting

⁸³ Hemphill, in the Standard Newspaper 09/02/2007.

⁸⁴ MRAG, *Control of Foreign Fisheries*, Policy Brief: Kenya (2006) <http://www.research4development.info/> (accessed 24 March 2009). The Fisheries Act makes it a condition of the license for all fishing vessels to submit data to the Director of fisheries.

⁸⁵ Evanson Chege Kamau, Andrew Wamukota and Nyawira Muthiga, 'Promotion and Management of Marine Fisheries in Kenya' in G. Winter. *Towards Sustainable Fisheries Law: A Comparative Analysis*. (IUCN, 2009) 122.

⁸⁶ Oceanic Development, Megapesca Lda (2007). *Report on Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

⁸⁷ Evanson Chege Kamau, Andrew Wamukota and Nyawira Muthiga, 'Promotion and Management of Marine Fisheries in Kenya' in G. Winter. *Towards Sustainable Fisheries Law: A Comparative Analysis*. (IUCN, 2009) 122.

of catches further perpetuate the loss of revenue from Kenya's tuna fisheries.⁸⁸ The effective management of the tuna resources under Kenya's jurisdiction therefore remains a challenge. As pointed out earlier, the management of tuna is subject to international rules. For Kenya to develop the tuna fisheries in its EEZ and hence increase the socio-economic benefits from these resources, it is necessary that its international obligations and responsibilities in respect of tuna are met. Thus, there is a need to examine the international legal requirements for managing tuna in the context of Kenya in order to ascertain the national implementation actions of these requirements.

1.4 Objective of the Thesis

The aim of this thesis is to examine and analyse the implementation of the international legal requirements for managing tuna by Kenya. The long-term profitability of Kenya's tuna fisheries is highly dependant on their proper management and sustainability. It is indeed necessary for Kenya to achieve this if its tuna resources are to contribute to its economic development.

1.5 Framework of Analysis

This research is based on a combination of a desktop study and field work. The desktop study reviewed the international legal framework for managing tuna and developed criteria for evaluating the consistency of Kenya's legal and policy framework with international requirements and best practice, and the consistent implementation of these requirements by Kenya. The desktop study component involved a literature review from the following sources; library research, official government reports and documents such as development plans, economic surveys and the poverty reduction strategy paper of Kenya. Reference was also made to relevant internet sources, journal articles, and international instruments and European Community resolutions related to fisheries. The field work component involved attending relevant international symposia⁸⁹ as well as interacting with the Fisheries Department and other relevant

⁸⁸ MRAG, *Review of Impacts of Illegal, Unreported and Unregulated Fishing on Developing Countries: Final Report*, London, UK, (2005) 55.

⁸⁹ The symposia attended were; *Fisheries Economics Management and Tuna Management Workshop for the Pacific Islands*, The Australian National University, Canberra, 25-26 September 2006; *IORG4-Marine biodiversity and Fisheries in the Indian Ocean Region: Opportunities and Threats*, Oman, 18-20 February 2007; *First International Symposium on Climate Impacts on Oceanic Top Predators (CLIOTOP)*, La Paz, Mexico, 3-7 December 2007 (The symposium was organised by GLOBEC, a component of the international Geosphere-Biosphere research programme. CLIOTOP devotes itself to the

government institutions in Kenya to access government documentation. Electronic mail was used to communicate with authors of selected articles cited during the course of the study as a means of obtaining additional relevant reference materials.

The legal and policy framework for fisheries management, and the management practices of Kenya in respect of tuna were analysed utilising a framework. The framework was based on the provisions of the LOSC and the UN fish Stocks Agreement. The framework of analysis in this thesis was discussed at two levels; the international and regional. The first part analysed the international legal requirements for States to manage tuna. The LOSC provides the international framework for managing and conserving all living marine resources. The LOSC also defines and recognises coastal States' sovereign rights and duties for the purpose of managing and conserving living resources like tuna in their EEZs.⁹⁰ Under the LOSC, tuna are categorised as highly migratory species.⁹¹ Due to their highly migratory nature, the LOSC provides the legal basis for the cooperative management of tuna resources.⁹² The LOSC requires States to establish cooperative management arrangements and agree upon conservation and management measures for tuna.⁹³

The UN Fish Stocks Agreement provides a framework for cooperation among States and facilitates the implementation of the provisions of the LOSC relevant for the effective management of straddling fish stocks and highly migratory fish stocks like tuna. The UN Fish Stocks Agreement provides the mechanisms for international cooperation in management of such fish stocks and requires that this cooperation be achieved through subregional or regional fisheries management organisations (RFMOs).⁹⁴ However, cooperation is still required even in the absence of such organisations.⁹⁵ Regional cooperation among the States involved in the Indian Ocean tuna fisheries is achieved through the Indian Ocean Tuna Commission (IOTC). In the

study of oceanic top predators within their ecosystems and uses a worldwide comparative approach among oceans, regions and species, requiring extensive collaborative effort); This was followed up by *Coping with Global Change in Marine Socio-ecological Systems*, FAO, Rome, Italy, 8-11 July 2008; *Conference on Fisheries Dependent Information*, Galway, Ireland, 23-26 August 2010.

⁹⁰ LOSC, Part V.

⁹¹ LOSC, Art. 64.

⁹² LOSC, Art. 63 (1), 63 (2) and 64.

⁹³ LOSC, Art. 63 (1), 63 (2) and 64.

⁹⁴ UN Fish Stocks Agreement, Part III.

⁹⁵ UN Fish Stocks Agreement, Ibid, Art. 8(5).

second part of the analysis, the tuna conservation and management measures established by the IOTC were examined in order to determine the extent to which the principles of the UN Fish Stocks Agreement pertaining to the conservation and management of tuna have been articulated, and the relevant measures adopted by the IOTC. In addition to the above instruments, the FAO Code of Conduct is also applicable to tuna as it establishes “principles and standards applicable to the conservation, management and development of all fisheries”.⁹⁶

The pertinent provisions of the above international instruments have been analysed in chapters 2 and 4. As a result of this analysis, three sets of criteria have been formulated. It is against this framework that Kenya’s national implementation actions are evaluated. The first set of criteria that should be met concerns the determination of total allowable catch as a measure for catch limitation.⁹⁷ Its implementation requires Kenya to take “into account the best scientific evidence, and to ensure through proper conservation and management measures that the maintenance of the living resources in the EEZ is not endangered by over-exploitation”.⁹⁸ The second set of criteria relates to the submission and sharing of data. Under international law, Kenya is required to contribute and share tuna fisheries data such as catch of target and non-target species and fishing effort in a timely manner.⁹⁹ The third set of criteria is concerned with compliance and enforcement. The measures that may be taken by Kenya to ensure compliance with laws and regulations adopted in respect of the EEZ include boarding, inspection, arrest, and judicial proceedings.¹⁰⁰ Kenya’s enforcement efforts also require the support of an adequate monitoring, control and surveillance (MCS) mechanism.¹⁰¹ Kenya’s international and regional obligations are to be implemented in cooperation with other Indian Ocean coastal and Island States as well as States participating in Indian Ocean tuna fisheries, through the IOTC.

1.6 Structure of the Thesis

⁹⁶ *FAO Code of Conduct*, Art. 1.3.

⁹⁷ *LOSC*, Art 61 (1).

⁹⁸ *LOSC*, Art 61(2); *UN Fish Stocks Agreement*, Art. 5(b).

⁹⁹ *LOSC*, Arts. 61(5) and 119(2); *UN Fish Stocks Agreement*, Art. 5(j).

¹⁰⁰ *LOSC*, Art 73.

¹⁰¹ *LOSC*, Art. 73(1).

The introductory chapter provided a background to the global importance of tuna, and highlighted the sustainability concerns pertaining to the utilisation of tuna resources. It also provided an overview of Kenya's tuna fishery and pointed out the challenges that Kenya is currently faced with in respect of the management of the tuna resources in its jurisdiction.

Chapter 2 provides an analysis of the international legal framework for managing tuna. It reviews the consequences of the adoption of the LOSC to the regime of freedom of fishing on the high seas in order to gain an understanding of the development of international law with respect to the management of marine fisheries resources. This chapter provides an analysis of the pertinent provisions of the international instruments relative to the management of tuna. These provisions include the general fisheries requirements for the EEZ. More importantly, this chapter analyses the provisions that are dedicated to the management and conservation of tuna. It underscores the importance of the international cooperative management of tuna and acknowledges the role of RFMOs in facilitating such cooperation.

Chapter 3 examines the regional framework for the conservation and management of tuna resources on the Indian Ocean. This chapter provides a background to the governance of tuna fisheries in the Indian Ocean and examines the role of the IOTC, with respect to the management and conservation of the tuna resources of the Indian Ocean. The chapter also examines the relevant provisions of the Agreement for the Establishment of the IOTC,¹⁰² which is the basic document establishing the structure of the Commission.

Chapter 4 provides an analysis of the international legal requirements for managing tuna that are required in the IOTC. The chapter examines the conservation and management measures that have been adopted by the IOTC in respect of tuna in order to determine the approaches that the IOTC has taken to implement these requirements. This provides the necessary context for analysing Kenya's implementation of its international and regional obligations relating to tuna.

Chapter 5 reviews national laws and policies of Kenya pertaining to the development and management of fisheries. The chapter examines Kenya's regulatory framework in order to establish the arrangements it provides for the development of tuna management strategies. This includes Kenya's status with respect to its ratification

¹⁰² Agreement for the Establishment of the IOTC <http://www.iotc.org/>, hereinafter the IOTC Agreement. (accessed 10 August 2010).

of the relevant international and regional fisheries instruments and a review of Kenya's national laws and policies related to fisheries, and in particular tuna fisheries management. In this chapter, Kenya's national development policies and other fisheries sector plans are also examined in order to ascertain the extent to which the fisheries sector has been included in Kenya's national development strategies. It will be shown that failure to fully integrate fisheries into Kenya's development discourse has impacted the development of an appropriate legal and policy framework for national tuna management.

Chapter 6 analyses Kenya's legal and policy framework as well as the management practices relative to the management and conservation of the tuna resources in Kenya's EEZ in order to ascertain the consistency of this framework with the international and regional legal requirements. Kenya's national framework and tuna management practices are assessed using the findings from chapters 2 and 4 of the thesis. It will be shown that Kenya has not fully adopted measures consistent with its international and regional obligations for the sustainable utilization of tuna, and that Kenya's current legal and policy framework, and management practices do not adequately address the long-term sustainability of its tuna resources.

Chapter 7 explores the options available to Kenya for the optimal utilisation of its tuna resources, by reviewing the approaches that other coastal States have taken to the development of tuna fisheries resources in areas within their national jurisdiction. The options examined include domestic tuna industry development and fisheries access agreements, including the European Union Fisheries Partnership Agreements (FPAs). The chapter provides examples drawn from the experience of other States in order to provide lessons for Kenya. The chapter emphasises the need for Kenya to develop a rational management regime for the tuna resources in its EEZ in order to fulfil its international obligations.

Finally, **Chapter 8** synthesises the results of the research and concludes that, Kenya has not fully adopted measures consistent with its international and regional obligations for the sustainable utilization of tuna, and that Kenya's current legal and policy framework does not adequately address the long-term sustainability of the tuna resources under its jurisdiction. Kenya's fisheries laws and policies are generic and are not tuna specific. The chapter recommends that Kenya adopt measures that would

ensure the long-term sustainability of its tuna resources, including the formulation of a legislated tuna management plan.

1.7 Significance of the Research

The significance of this thesis is threefold. First, it makes a significant contribution to the academic literature on Kenya's tuna fisheries. There has been no other study carried out to critically examine the national implementation of international legal obligations in respect to tuna in Kenya. This thesis underscores the policy implications of the international and regional instruments for the sustainability of Kenya's tuna resources.

Second, the conclusions drawn from the analyses in this thesis will be instrumental in informing the current policy debate on how Kenya's tuna resources should be utilised. These results provide a basis upon which policy decisions can be made for the long-term sustainability of Kenya's tuna resources. The recommendations will assist Kenya to formulate strategies for implementing its international and regional obligations with a view to promoting the long-term sustainability of tuna resources, particularly nationally and regionally.

Third, the thesis will help to improve Kenya's understanding of its international and regional commitments for conservation and management of tuna fisheries. The findings of the research and the recommendations will help Kenya to improve the current management practices in its tuna fisheries and could be applied to other coastal States in the WIO region.

CHAPTER 2

INTERNATIONAL LEGAL FRAMEWORK FOR MANAGING TUNA

2.1 Introduction

This chapter provides an overview of the international legal framework governing the conservation, management and utilization of tuna resources. This framework responds to the biological characteristics of the tuna species. This chapter is therefore divided into three specific parts. First, the unique biological characteristics of tuna will be reviewed. The life cycles of the tuna species of concern to the present thesis will also be discussed. This is essential to understanding the nature and context of the international legal framework for governing tuna fisheries.

The second part of the chapter analyses the measures adopted pursuant to the LOSC, and the UN Fish Stocks Agreement, which are required to be implemented by contracting States for the conservation and management of tuna stocks. A brief summary of the rights of coastal States in the EEZ will be provided. Additionally, the general obligations relative to the conservation and management of fisheries resources in the EEZ, and which are also applicable to tuna are discussed. An analysis of the obligations imposed upon States under the LOSC with respect to the conservation and management of tuna stocks owing to their biological characteristics is provided. This part also underscores the obligation of States to cooperate with each other in the management of tuna stocks and highlights the inadequacies of the LOSC in providing a framework for such cooperation and the role of the UN Fish Stocks Agreement in this respect. Additionally, the role of RFMOs in facilitating cooperation between contracting States for the purpose of meeting their respective obligations is underscored. The concept of the “duty to cooperate” within the meaning of the LOSC and the UN Fish Stocks Agreement is analysed. Such analysis provides the basis upon which the conservation and management measures for tuna are to be implemented.

Third, a set of criteria for the assessment of the adequacy of Kenya’s legal and policy framework for the management of the tuna resources within its jurisdiction is established and analysed. The criteria are drawn from the material analysed and presented in the preceding two sections of this chapter.

2.2 Biological Characteristics of Tuna

Tuna and tuna-like species belong to the sub-order *Scombroidei*, which is comprised of ‘true tunas’ (albacore, yellowfin, bigeye, Atlantic, Pacific and southern bluefin tuna), skipjack, billfish, swordfish and other tuna-like species.¹ The term tunas is often used to refer to tuna and tuna-like species.² In this thesis these two terms are used interchangeably. Tunas make up fifteen species in all, including the most economically important species.³

Tunas are pelagic and occupy the upper layers of the tropical, subtropical and temperate oceans.⁴ The smaller species of tuna and juveniles of the larger species are found in the upper layers up to about 200 m, above the thermocline,⁵ while the larger species occur in the deeper, cooler waters.⁶ However, some tunas such as skipjack, albacore and bluefin are found in both these depth ranges.⁷ Although all tunas and tuna-like species occupy a high trophic level as adult predators, their highly versatile and opportunistic⁸ feeding behaviour and ontogenetic⁹ changes in their feeding habits mean

¹ Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical paper No. 483 (FAO, 2005) 2. For further reading and taxonomy of tunas, See Witold L Klawe, ‘What is a Tuna?’ (1977) 39(11) *Marine Fisheries Review*; B B Collette and C E Nauen, *FAO Species Catalogue Vol. 2, Scombrids of the World. An Annotated and Illustrated Catalogue of Tunas, Mackerels, Bonitos and Related Species known to date* (FAO, 1983), FAO Fisheries Synopsis 125 (2); I Nakamura, *FAO Species Catalogue: Vol. 5, Billfishes of the World. An Annotated and Illustrated Catalogue of Marlins, Sailfishes, Spearfishes and Swordfishes known to date* (FAO, 1985), FAO Fisheries Synopsis 125 (5); J Joseph, W Klawe and P Murphy, *Tuna and Billfish-Fish without a Country* (Inter-American Tropical Tuna Commission, 2nd ed, 1980).

² Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical paper No. 483 (FAO, 2005) 2.

³ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 4; Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical paper No. 483 (FAO, 2005) 2.

⁴ Biological Characteristics of Tuna, <http://www.fao.org/> (accessed 19 May 2010).

⁵ The thermocline is the region below the surface layer of the sea, where the temperature gradient increases abruptly (i.e. where temperature decreases rapidly with increasing depth). It is usually an ecological barrier and its oscillations have significant consequences on fish stocks distribution and ocean productivity. <http://www.fao.org/> (accessed on 19 May 2010).

⁶ Biological Characteristics of Tuna, <http://www.fao.org/> (accessed 19 May 2010).

⁷ Ibid.

⁸ Tuna do not have strong preferences for certain prey at species level, but regionally and at a given time, a few species may represent almost all the food of fish of a specific age group. See Biological Characteristics of Tuna, <http://www.fao.org/> (accessed 31 January 2011).

⁹ Tuna have three distinct growth stages; larvae, juveniles and adults. The Larvae live in warm surface waters and feed mainly on zooplankton, small crustaceans, fishes molluscs and jellyfish. Juveniles prey on epipelagic fish, crustaceans and squids. The adult tunas feed on juvenile tunas and other pelagic fish like mackerels. See Biological Characteristics of Tuna, <http://www.fao.org/> (accessed 31 January 2011).

that over their life history, they occupy more trophic levels than any other group of fishes.¹⁰ This is because tuna feed on a diverse range of prey across different zones of the ocean during their different developmental stages as larvae, juveniles and adults.¹¹

Fundamental aspects of the anatomy, biology and physiology of tunas aid them in fast continuous swimming movements and also in adaptation to their habitat. Their body shape and fins are streamlined to facilitate swift movement.¹² Tunas also have an extremely efficient metabolic system with a circulatory system that enables them to thermo-regulate, therefore retaining or dissipating heat as is required. The phenomenon of thermoregulation in tuna enables them to maintain swimming speed across the oceans, dive to immense depths and recover rapidly after prolonged exertion.¹³

The migratory nature of tuna correlates with physical ocean properties such as satisfactory temperature and oxygen, and the appropriate food supplies. To maintain their high speeds for prolonged periods, tunas require large amounts of oxygen. By swimming constantly with their mouths open, tunas absorb the oxygen from water forced over their gills in order to satisfy their oxygen requirements.¹⁴ Due to their high metabolic requirements tunas require ready access to food.¹⁵ For this reason tunas swim constantly for feeding purposes, sometimes consuming up to “15% of their body weight per day”.¹⁶ Such sustained cruising also enables them to migrate long distances in search of seasonal food and to return to warm waters for spawning.¹⁷

¹⁰ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 4.

¹¹ Tunas feed on prey found in the pelagic (open ocean), epipelagic (close to water surface) and mesopelagic zones (180-900 meters deep). See Biological Characteristics of Tuna, <http://www.fao.org/> (accessed 31 January 2011).

¹² Donley, et al, ‘Convergent Evolution in Mechanical Design of Lamnid Sharks and Tunas’ (2004) 429 *Nature* 61, 61.

¹³ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 4; Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical paper No. 483 (FAO, 2005) 2; F G Carey, J M Teal and J W Kanwisher, Warm Blooded Fish (1971) 11 *American Zoologist* 137.

¹⁴ Richard W Brill and Peter G Bushnell, ‘The Cardiovascular System of Tunas’ in Barbara A Block and E Donald Stevens (eds), *Tuna: Physiology, Ecology and Evolution* (Academic Press, 2001) 81.

¹⁵ Kathleen A Miller, ‘Climate Variability and Tropical tuna: Management Challenges for Highly Migratory Fish Stocks’ (2007) 31 *Marine Policy* 56, 60.

¹⁶ B Stequert and F Marsac, *Tropical Tuna Surface Fisheries in the Indian Ocean*, FAO Fisheries Technical Paper No. 282 (FAO, 1989).

¹⁷ Jeffrey B Graham and Kathryn A Dickson, ‘Anatomical and Physiological Specializations for Endothermy’ in Barbara A Block and E Donald Stevens (eds), *Tuna: Physiology, Ecology and Evolution* (Academic Press, 2001) 124.

All the major market species of tuna such as skipjack, yellowfin and bigeye spawn in warm waters, but the adults migrate widely to feeding grounds in tropical, temperate or sub-tropical waters, depending on the species.¹⁸ Tunas spawn abundantly in the open water, with spawning females releasing up to 100,000 eggs per kilogram of body weight per spawning.¹⁹ Females can spawn several million eggs per year.²⁰ Tunas display a strong schooling behaviour in the early life stages, during spawning and also when foraging.²¹

Tunas migrate over long distances for purposes of feeding or reproduction. For example, temperate tunas like albacore migrate across temperate waters to feed and in tropical waters to spawn. The major species of tuna and tuna-like species have been known to undertake movements of more than 1000nm.²² A number of studies have been conducted and different methods employed in the study of tuna migration behaviour. For example, temperature preference and oxygen tolerance of tuna have been used to determine areas of accessibility for various species, therefore making it possible for migration patterns and identification of stocks to be determined.²³ Studies of the stock structure obtained from tag-recapture data, fisheries data and archival tagging experiments have also been used to indicate the vast movements made by the different species of tuna across oceans.²⁴

Because of their biological characteristics and the corresponding natural needs, tunas are categorised as “highly migratory species” under international law. The species that fall under this category are defined in Annex 1 of the *LOSC*. The highly migratory species included in Annex 1 of the *LOSC* include tunas, bill fishes, sharks and

¹⁸ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 7.

¹⁹ Robert Gillet, *Tuna for Tomorrow?: Some of the Science behind an Important Fishery in the Pacific Islands*, A Report prepared under RETA128: Alternative Negotiating Arrangements to Increase Fisheries Revenues in the Pacific (2005) 17.

²⁰ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 7.

²¹ Ibid.

²² Ibid.

²³ D Gary Sharp, 1979, ‘Areas of Potentially Successful Exploitation of Tunas in the Indian Ocean with Emphasis on Surface Methods’ in J D Ardill 1984, *Tuna Fisheries in the South West Indian Ocean* (1984), <http://www.fao.org/> (accessed on 20 May 2010).

²⁴ Block, et al, ‘A New Satellite Technology for Tracking the Movements of Atlantic Bluefin Tuna’ (1998) 95(16) *Proceedings of the National Academy of Sciences of the United States of America* 9384. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC21347/> (accessed 20 May 2010).

cetaceans.²⁵ Species listed as highly migratory are so listed because they travel appreciable distances in the areas of the ocean.²⁶ As such, tunas are entirely mobile and may during their lifetime enter and exit the waters of a number of jurisdictions.²⁷ As a result, several states have jurisdiction over tuna as they migrate between the coastal zones of different States and the high seas.

It is argued that, not all tunas move so extensively, and that there are some coastal species which migrate more widely than some tuna.²⁸ The species categorised in Annex 1 are therefore not considered representative of all highly migratory species.²⁹ The highly migratory species categorisation of tuna is considered political and not biological, a factor which is believed to have limited the number of species identified in Annex 1 of the LOSC.³⁰ The reason for the political categorisation and interest arises from the high commercial value associated with tuna and their global economic importance in international trade.

2.3 Life Cycle of Tuna

The tuna species relevant to this thesis fall into the category of principal market tunas.³¹ The market tuna species of concern to this thesis are bigeye (*Thunnus obesus*),

²⁵ LOSC, Annex 1.

²⁶ Evelyn Meltzer, 'Global Overview of Straddling and Highly Migratory Fish Stocks: the Nonsustainable Nature of High Seas Fisheries' (1994) 25 *Ocean Development and International Law* 255, 257.

²⁷ Jacek Majkowski, *Methodological Workshop on the Management of Tuna Fishing*. (FAO, 2007) 156.

²⁸ Ray Hilborn and John Sibert, 'Is International Management of Tuna Necessary?' (1988) 12(1) *Marine Policy* 31; John Gulland, 'Policy notes, Tuna and international institutions' (1988) 12(4) *Marine Policy* 408.

²⁹ It is argued that from a taxonomic point of view, the list provided in Annex 1 of the LOSC is not representative of all highly migratory species and that some of the listed species are not considered highly migratory, while the real migratory species have been omitted. See Andrew Serdy, 'One Fin, Two Fins, Red Fins, Bluefins: Some Problems of Nomenclature and Taxonomy Affecting Legal Instruments Governing Tuna and other Highly Migratory Species' (2004) 28 *Marine Policy* 235, 236. The definition of highly migratory species represented in Annex 1 has also been referred to as "legal" rather than scientific for the same reasons. See, Maguire, et al, *The State of World Highly Migratory, Straddling and other High Seas Fishery Resources and Associates Species*, FAO Fisheries Technical Paper No. 495 (FAO, 2006) 4.

³⁰ The categorisation of tuna as a highly migratory species is deemed political because of the position of the DWFNs led by the United States of America during UNCLOS III that; highly migratory stocks are separate and distinct from straddling stocks. See William T Burke, *The New International Law of Fisheries: UNCLOS 1982 and beyond* (Clarendon Press, 1994) 200; Trond Bjørndal and Gordon Munro, 'The Management of High Seas Fisheries Resources and the Implementation of the UN Fish Stocks Agreement of 1995' in Henk Folmer and Tom Tietenberg (eds), *The International Year Book of Environmental and Resource Economics 2003/2004* (Edward Elgar Publishing, 2003) 3.

³¹ Principal market tunas are economically significant in international trade.

yellowfin (*Thunnus albacares*) and skipjack (*Katsuwonus pelamis*).³² These species are categorised as tropical tunas and they are highly prolific.³³

Yellowfin tuna are found in tropical and subtropical seas but absent in the Mediterranean Sea.³⁴ This oceanic species occur above and below the thermocline and they prefer a temperature range between 18° and 31°C.³⁵ In terms of volume and commercial importance, yellowfin comes second after skipjack.³⁶ It has an average weight of 25kg at maturity, attains sexual maturity at 2.8 years and has a life span of 10 years.³⁷ Yellowfin spawns all year round and is usually to be found in near-surface waters.³⁸ It is usually marketed in various forms such as canned, fresh, frozen loins, fresh fillets or smoked. Yellowfin are however used more for canning, and those targeted by longliners are used for *sashimi*.^{39, 40} Up to 25% of the global catches of yellowfin are from the Indian Ocean.⁴¹

Bigeye tuna are also found in tropical and subtropical oceans, with 15% of the global catches being taken from the Indian Ocean.⁴² Bigeye has a maximum length of 180cm, weight of 225kg, and attains sexual maturity at 3.5 years.⁴³ Bigeye has the longest longevity of the three tropical tuna species. Bigeye has a life span of 10-15

³² Jacek Majkowski, *Global Fishery Resources of Tuna and Tuna-like Species*, FAO Fisheries Technical paper No. 483 (FAO, 2005) 2.

³³ Biological Characteristics of Tuna <http://www.fao.org/> (accessed 1 February 2011). Tropical tunas mature and reproduce rapidly.

³⁴ Bruce B Collette and Cornelia Nauen, *FAO Species Catalogue, Vol. 2 Scombrids of the World: An Annotated and illustrated Catalogue of Tunas, Mackerels, Bonitos and Related Species known to date*, FAO Fisheries Synopsis No. 125 Vol. 2 (FAO, 1983) 84.

³⁵ Ibid; FAO, Species fact sheet, <http://www.fao.org/> (accessed on 19 May 2010).

³⁶ FAO, *Review of the State of World Marine Fishery Resources*, Fisheries Technical Paper no. 457 (FAO, 2005) 167.

³⁷ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001).

³⁸ Bruce B Collette and Cornelia Nauen, *FAO Species Catalogue, Vol. 2 Scombrids of the World: An Annotated and illustrated Catalogue of Tunas, Mackerels, Bonitos and Related Species known to date*, FAO Fisheries Synopsis No. 125 Vol. 2 (FAO, 1983) 84.

³⁹ FAO, *Historical trends of tuna catches of the world*, Fisheries Technical paper No. 467 (FAO, 2004) 43.

⁴⁰ Sashimi is a Japanese delicacy primarily consisting of very fresh sea foods, thinly sliced and served with a dipping sauce.

⁴¹ Tuna species data sheets, http://www.atuna.com/species/species_datasheets.htm#Yellowfin_tuna (accessed on 16 February 2010).

⁴² Ibid.

⁴³ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001).

years compared to a life span of less than 10 years for skipjack and yellowfin.⁴⁴ Bigeye tunas have a high fat content for insulation as they thrive in deeper colder waters compared to yellowfin and skipjack tunas, making them suitable for *sashimi*. Bigeye tolerates low temperatures and low oxygen levels, making them less resilient to exploitation compared to skipjack and yellowfin tunas.⁴⁵

Skipjack tunas are found in tropical and subtropical waters. They attain sexual maturity at 1.5 years, growing rapidly to an average maximum length of 75cm and weight of 23kg.⁴⁶ Skipjack are prolific and make up the greater part of global tuna catches followed by Yellowfin and bigeye, with their commercial importance in the same order.⁴⁷ They migrate less than the other tunas and spawn throughout the year when conditions are favourable.⁴⁸ Skipjack are generally more resilient to exploitation than yellowfin.⁴⁹

2.4 Legal Framework for Managing Tuna

In order to provide a historical perspective on the legal rules governing tuna resources, an examination of the developments of the law of the sea is necessary. This thesis does not present these developments in chronological order, but simply provides a broad overview of the significant developments with respect to tuna.

In recent decades the fisheries regime has undergone substantial changes from the *freedom of the seas* to enclosure.⁵⁰ Historically, the concept of “open access” to the world’s tuna and all other fisheries resources was the accepted norm that stemmed from

⁴⁴ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001).

⁴⁵ Robert Gillet, *Tuna for Tomorrow?: Some of the Science behind an Important Fishery in the Pacific Islands*, A Report prepared under RETA128: Alternative Negotiating Arrangements to Increase Fisheries Revenues in the Pacific (2005) 18; Richard W Brill and Peter G Bushnell, ‘The Cardiovascular System of Tunas’ in Barbara A Block and E Donald Stevens (eds), *Tuna: Physiology, Ecology and Evolution* (Academic Press, 2001) 108.

⁴⁶ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001).

⁴⁷ FAO, *Review of the State of World Marine Fishery Resources*, Fisheries Technical Paper no. 457 (FAO, 2005) 167.

⁴⁸ IOTC, Report of the Sixth Session of the Scientific Committee, Victoria, Seychelles, 3-6 December (2003) 56.

⁴⁹ Maguire, et al, *The State of World Highly Migratory, Straddling and other High Seas Fishery Resources and Associates Species*, FAO Fisheries Technical Paper No. 495 (2006) 10.

⁵⁰ Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 46.

the principle of *freedom of the high seas* which was conceptualised by Hugo Grotius.⁵¹ Grotius denied that national authority could reign over the high seas aside from a confined coastal belt associated with coastal States.⁵² The area of territorial jurisdiction then, was limited to a 3-nautical mile rule,⁵³ and the area beyond the fishing zone was free for access by all nations, though it was subject to flag State jurisdiction.⁵⁴ Grotius' 17th century freedom of the seas concept eventually evolved into customary international law and even today it remains a significant part of international fisheries management.⁵⁵

The doctrine of *the freedom of the high seas* was based on the notion that ocean resources were inexhaustible.⁵⁶ Under this doctrine, the implications for the sustainability of fisheries resources such as tuna were adverse, as there was no control of exploitation of fisheries resources beyond the territorial jurisdiction. Since most States were interested in short-term economic benefits, they did not design management approaches that would sustain fisheries resources. Tuna, like the other fisheries resources of the oceans became exposed to overexploitation, as a result of uncontrolled fishing especially by DWFNs.⁵⁷ Evidently these fishing activities led to over-exploitation and over-capitalisation of most fisheries,⁵⁸ and the decline of fish stocks became evident.⁵⁹

⁵¹ Hugo Grotius, *The Freedom of the Seas* (Oxford University Press, 1916) 72.

⁵² David Anderson, *Modern Law of the Sea: Selected Essays*, (Martinus Nijhoff Publishers, 2008) 5.

⁵³ See for example, McDougal and Burke, *Public Order of the Oceans: A Contemporary International Law of the Sea* (Yale University Press, 1987) 449; Lawrence Juda, *International Law and Ocean Use Management: The Evolution of Ocean Governance* (Routledge, 1996) 140.

⁵⁴ Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 5.

⁵⁵ Ibid.

⁵⁶ Hugo Grotius, a Dutch jurist is regarded as "the father of international law" for his publication *Mare Liberum* (*The Free Seas*), published in 1609. He is also regarded as 'the father of the law of the sea'. *Mare Liberum*, a chapter from the book *De Jure Praedae* (On the Law of Spoils) subscribed to the doctrine of *freedom of the seas* for navigation and trade by all nations, thereby objecting to the Spanish and Portuguese claims. See for example, Orrego Vicuna, *The Changing International Law of High seas Fisheries* (Cambridge University Press, 1999) 4; R P Anand, *Origin and Development of The Law of The Sea* (Martinus Nijhoff, 1982) 2; Pitman B Potter, *The Freedom of the Seas in History, Law, and Politics* (Longmans, 1924) 61-62; above n 51, 72-76.

⁵⁷ Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 2.

⁵⁸ Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 5.

⁵⁹ The technological advances in fisheries attracted further maritime claims and several States passed legislation in favour of such claims. See David Attard, *The Exclusive Economic Zone in International*

The resultant disputes between coastal States and DWFNs created the need for the regulation of fishing activities with respect to access, and the realisation that management measures needed to be instituted to enhance conservation of marine fisheries resources as a whole.⁶⁰ For most coastal States, extended coastal State jurisdiction over the fisheries resources was the preferred method for controlling fishing activities in their waters,⁶¹ and the unilateral extension of fisheries jurisdiction by coastal States therefore ensued.⁶² The United Nations responded by convening a series of multilateral Conferences on the Law of the Sea,⁶³ seeking to find conservation and management solutions for high seas fisheries resources and to regulate the maritime claims that were being made by coastal States.⁶⁴ Hence, the codification of the Law of the Sea, which started from the 1930 Hague codification conference.⁶⁵

The 1958 Geneva Convention on Fishing and Conservation of Living Resources of the High Seas,⁶⁶ which was adopted at UNCLOS I was an attempt to respond to the conservation concerns of the high seas fish stocks, as evidenced by the summary in its

Law (Oxford University Press, 1987) 14; Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 2.

⁶⁰ See for example, Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 6; Orrego Vicuna, *The Changing International Law of High seas Fisheries* (Cambridge University Press, 1999) 18.

⁶¹ Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 6.

⁶² Globally, coastal States extended their jurisdiction to 12 nautical miles, while others like the United States of America extended their fisheries claims beyond the territorial limit by way of the Truman proclamation of 1945. These claims were followed by several other States making claims in Latin America, Africa, Asia and Iceland. They extended these claims to 200 nautical miles, thus began the establishment of exclusive fishing zones. See Duke E Pollard, 'The Exclusive Economic Zone: The elusive consensus' in M Dahmani, *The fisheries regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 14; Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 6; R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 205.

⁶³ These were the series of the United Nations Conference on the Law of the Sea (UNCLOS); UNCLOS I, II, & III.

⁶⁴ Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 6; Orrego Vicuna, *The Changing International Law of High seas Fisheries* (Cambridge University Press, 1999) 18.

⁶⁵ The Hague codification failed to define a permissible limit of the territorial sea. See George V Galdorisi and Kevin R Vienna, *Beyond the Law of the Sea: New Directions for US Oceans Policy* (Praeger Publishers, 1997) 13; David Freestone, Richard Barnes and David M Ong (eds), *The Law of the Sea: Progress and Prospects* (Oxford University Press, 2006) 28; Jose A de Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* ((Martinus Nijhoff Publishers, 1997) 2.

⁶⁶ The *Convention on Fishing and conservation of Living Resources of the High Seas*, opened for signature 29 April 1958, 559 UNTS 285 (entered into force 20 March 1966). Hereinafter the High Seas Fisheries Convention.

preamble.⁶⁷ The High Seas Fisheries Convention which highlighted the consequences of overexploitation and called for international cooperation amongst States in addressing conservation issues provided the definition of conservation of the high seas' living resources as:

....the aggregate of the measures rendering possible the optimum sustainable yield from those resources so as to secure a maximum supply of food and other marine products.⁶⁸

However, the High Seas Fisheries Convention still retained the high seas tenets which required fishing vessels to observe only the law of their own flag State.⁶⁹ The High Seas Fisheries Convention did not concern itself with the conservation of highly migratory species like tuna and it failed to provide the appropriate mechanisms for effective regulation and enforcement for the conservation and management of tuna resources on the high seas for various reasons.

First, the convention did not provide any means of enforcement against States that were not party to an agreement as far as the conservation of fisheries resources beyond the jurisdiction of coastal States was concerned.⁷⁰ Secondly, there were conflicting political concerns between States regarding some of the provisions. For example, some States were of the view that a coastal State "should not be entitled to a special interest solely because of its geographically privileged position"; as such, the coastal State could easily reach an agreement with other fishing States on issues related to the conservation of fisheries resources.⁷¹ On the other hand, it was the opinion of

⁶⁷ The Preamble of the *High Seas Fisheries Convention* provides that; "Considering that the development of modern techniques for the exploitation of the living resources of the sea, increasing man's ability to meet the need of the world's expanding population for the food, has exposed some of these resources to the danger of being over-exploited". ".....there is a clear necessity that they be solved, whenever possible, on the basis of international cooperation through the concerted action of all States concerned". Article 1 of *The High Seas Fisheries Convention* provides that "all States have a right for their nationals to engage in fishing on the high seas, subject to their treaty obligations, and the interests and rights of coastal States, and that, all States are obliged to cooperate for the purpose of conservation of the living resources of the high seas".

⁶⁸ The *High Seas Fisheries Convention*, Art. 2.

⁶⁹ Shigeru Oda, 'Fisheries under the United Nations of the Law of the Sea' (1983) *The American Journal of International Law* 77 (4) 739, 740.

⁷⁰ Dolliver Nelson, 'The Development of the Legal Regime of High Seas Fisheries' in Alan Boyle and David Freestone (eds), *International Law and Sustainable Development* (Oxford University Press, 1999) 116.

⁷¹ Shigeru Oda, *Fifty Years of the Law of the Sea* (Kluwer Law International, 2003) 144; Dolliver Nelson, 'The Development of the Legal Regime of High Seas Fisheries' in Alan Boyle and David Freestone (eds), *International Law and Sustainable Development* (Oxford University Press, 1999) 116.

other States that the provisions were not sufficient to protect the special interests of the coastal State.⁷² Third, disagreements arose concerning the equitable distribution of resources among States.⁷³ Consequently, many major fishing States failed to ratify the High Seas Fisheries Convention,⁷⁴ making the chances of its effectiveness in conservation of tuna and other fisheries even less.⁷⁵

2.4.1 Establishment of the EEZ

The negotiations of UNCLOS III resulted in the adoption of the LOSC, a new international order for the oceans of the world.⁷⁶ The LOSC revolutionised the legal regime relative to fisheries and brought to an end the notion of *the freedom of the seas* for a large proportion of marine resources. The LOSC also brought about the division of the oceans into zones and gave greater national control and jurisdiction to States over significant areas “in terms of human use, of ocean space”.⁷⁷ With respect to fisheries, the LOSC introduced various regimes. The most significant regime in relation to the governance of marine fisheries resources including tuna is the exclusive economic zone (EEZ). In any event, the EEZ was perceived as establishing a balance between those States laying claim to a 200nm coastal area such as Latin America and African States, and States that were not particularly supportive of the idea of extending the coastal jurisdiction of States. Accepted as a compromise of sorts, the EEZ concept gave way to its inclusion in the LOSC since it was accepted by a majority of contracting States.⁷⁸

The EEZ concept “changed the jurisdictional framework of fisheries worldwide”.⁷⁹ This is because the LOSC permitted coastal States to extend their claims over jurisdiction to what was previously high seas, thus bringing a significant

⁷² The *High Seas Fisheries Convention*, Art. 6 (1). Oda points out that the concept of “special interest” should be viewed simply in terms of conservation as opposed to entitlement claims to preferential fishing rights by some States, on the basis of special conditions. See Shigeru Oda, *Fifty Years of the Law of the Sea* (Kluwer Law International, 2003) 144.

⁷³ Shigeru Oda, *Fifty Years of the Law of the Sea* (Kluwer Law International, 2003) 162.

⁷⁴ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 287.

⁷⁵ Stuart M. Kaye, *International Fisheries Management* (Kluwer Law International, 2001) 75.

⁷⁶ Arnd Bernaerts, *Bernaerts’ Guide to the 1982 United Nations Convention on the Law of the Sea* (Trafford Publishing, 2006) 9.

⁷⁷ Lawrence Juda, *International Law and Ocean Use Management* (Routledge, 1996) 225.

⁷⁸ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 133.

⁷⁹ Rögnvaldur Hannesson, ‘The Exclusive Economic Zone and Economic Development in the Pacific Island Countries’ (2008) 32 *Marine Policy* 886, 886.

proportion of the fisheries resources that had once been freely accessed, under the jurisdiction of coastal States. Access to fish became the “prerogative of the nearest State, usually referred to as the coastal State”.⁸⁰ “More than ninety percent of the global fish catch is estimated to be taken within waters under the jurisdiction of coastal States”.⁸¹

The creation of the EEZ provided coastal States with the authority to manage and control access to fish that were in their EEZ either for their “benefit individually or in cooperation where stocks are shared among two or more States”.⁸² Churchill and Lowe argue that EEZs reflect the developing countries’ desire for “economic development” and for obtaining increased “control over the economic resources off their coasts, particularly fish stocks” which were for the most part the subject of exploitation by the fishing vessels of developed countries.⁸³

On another level, the creation of the EEZ meant that some States that previously benefited from the larger free for all ocean territory, have limited access to fishing grounds. In this regard, the creation of EEZs is tantamount to transferring “wealth from distant water fishing nations to coastal States”.⁸⁴ However, the EEZ also facilitates motivation for generating wealth via the improved management of fish stocks.⁸⁵ Regardless, the creation of the EEZs means or is anticipated to mean positive consequences for EEZ resources with respect to economic development of the relevant coastal States, particularly those coastal States where fish stocks are entirely significant to their economies.⁸⁶

The scope of the EEZ is defined in Part V of the LOSC where its physical range, legal scope and the rights and obligations of coastal States are provided for. The EEZ is

⁸⁰ Ibid.

⁸¹ Donna R Christie, ‘The conservation and Management of Stocks Located Solely within the Exclusive Economic Zone’, in Ellen Hey (ed), *Development in the International Fisheries Law* (Kluwer Law International, 1999) 395, 397; FAO, *Implementation of the International Plan Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*, FAO Technical Guidelines for Responsible Fisheries No. 9. Rome (2004); R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 162.

⁸² Rögnvaldur Hannesson, ‘The Exclusive Economic Zone and Economic Development in the Pacific Island Countries’ (2008) 32 *Marine Policy* 886, 886.

⁸³ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 160.

⁸⁴ Rögnvaldur Hannesson, ‘The Exclusive Economic Zone and Economic Development in the Pacific Island Countries’ (2008) 32 *Marine Policy* 886, 886.

⁸⁵ Ibid.

⁸⁶ Ibid.

defined as ‘an area beyond and adjacent to the territorial sea,⁸⁷ which shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured’.⁸⁸ Article 56 of the LOSC sets forth the rights, duties and jurisdiction of coastal States within their respective EEZs. The sovereign rights entitle States to explore and exploit, conserve and manage the natural resources of the EEZ, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil.⁸⁹ As a result, coastal States have been granted significant access and authority to the fisheries resources of the EEZ, including tuna. Coastal States are not only able to utilise the tuna resources in the EEZ for their own benefit but they can also limit access to these resources and determine how they are to be utilised.⁹⁰ The creation of the EEZ means that the effected State owns and manages all of the resources, living and non-living within the broad expanse of coastline.⁹¹

The exercise of coastal State rights is subject to defined general principles of international law.⁹² The LOSC provides the scope of coastal States’ rights and obligations for the purpose of managing and conserving fisheries resources in their EEZs.⁹³ In view of that, tuna are also subject to these general fisheries obligations. However, there are additional obligations with respect to the conservation and management of tuna which will be further analysed below.

The conservation and management responsibilities of coastal States in respect of the tuna resources in the EEZ include the obligation to determine the allowable catch (TAC) of the living resources in the EEZ,⁹⁴ and also to ensure through proper conservation and management measures that the maintenance of the living resources in

⁸⁷ LOSC, Art. 55.

⁸⁸ LOSC, Art. 57.

⁸⁹ LOSC, Art. 56 (1)(a).

⁹⁰ The EEZ provides an opportunity for States to improve decisions concerning fishery conservation and management. The fact that the EEZ fisheries are within a coastal State’s jurisdiction subjects these resources to a single management system. This can be challenging in the case of tuna which are migratory and therefore requiring the involvement of more than one State to manage. It suffices to note that this was a transformation brought about by developing countries. See M Dahmani, *The fisheries regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 14.

⁹¹ Peter B Payoyo, *Cries of the Sea: World Inequality, Sustainable Development and the Common Heritage of Humanity*, (Martinus Nijhoff Publishers, 2004) 75.

⁹² Douglas M. Johnston, *The International Law of Fisheries: A Framework for Policy-Oriented Inquiries* (Kluwer Academic Publishers, 1987) LVIII.

⁹³ LOSC, Arts. 56, 61, 62 and 64.

⁹⁴ LOSC, Art. 61(1).

the EEZ are not endangered by over-exploitation.⁹⁵ In taking measures to prevent over-exploitation, the coastal State is required to take into consideration the effects on species associated with or dependent on harvested species.⁹⁶ Additionally, data relevant to the conservation of fish stocks shall be contributed and exchanged.⁹⁷

Aside from their conservation obligations, coastal States are also obliged to promote the objective of optimum utilisation of the living resources of the EEZ.⁹⁸ To fulfil this obligation, coastal States are required to determine their capacity to harvest the living resources of the EEZ.⁹⁹ Where coastal States do not have the capacity to harvest the entire allowable catch, they are required, through agreements or other arrangements to give other States access to the surplus of the allowable catch.¹⁰⁰ The coastal State is empowered to regulate the activities of nationals of other States fishing in its EEZ,¹⁰¹ to ensure that they are consistent with national laws. Accordingly, coastal States are under an obligation to institute effective compliance and enforcement mechanisms to ensure implementation of the conservation and management measures that they have adopted.¹⁰²

2.4.1.1 Specific Tuna Obligations

The broad migratory range of tunas across jurisdictional boundaries exposes them to exploitation by several States. As such, tunas cannot be managed unilaterally. The challenge of managing tuna is that, the conservation and management efforts of one State can be undermined by the uncontrolled fishing activities of a neighbouring State or by States fishing on the high seas.¹⁰³ The LOSC recognises the management challenges associated with tunas due to their highly migratory nature and takes a

⁹⁵ LOSC, Art. 61(2).

⁹⁶ LOSC, Art. 61(4).

⁹⁷ LOSC, Art. 61(5).

⁹⁸ LOSC, Art. 62(1).

⁹⁹ LOSC, Art. 62(2).

¹⁰⁰ LOSC, Art. 62(2).

¹⁰¹ LOSC, Art. 62(4).

¹⁰² LOSC, Art. 73(1); *UN Fish Stocks Agreement*, Arts. 21 and 22.

¹⁰³ William T Burke, 'Highly Migratory Species in the new Law of the Sea' (1984) 14 *Ocean Development & International Law* 273, 275; Transform Aqorau, 'Cooperative Management of Shared Fish Stocks in the South Pacific' in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695(57).

different approach in terms of the exclusive jurisdiction of coastal States. As such, in addition to tuna being subject to coastal State authority in the EEZ, there are specific obligations imposed by the LOSC upon States with respect to tuna. Such obligations which are aimed at managing tunas across their migratory range are found in Articles 63 and 64 of the LOSC. These articles underpin the principle of cooperative management of tuna and provide for their management at different levels; a) between opposite and adjacent to EEZs; and b) between EEZs and the high seas.

An illustration of the distribution of the tuna stocks as reflected in Articles 63 and 64 is provided in Figure 4 below.

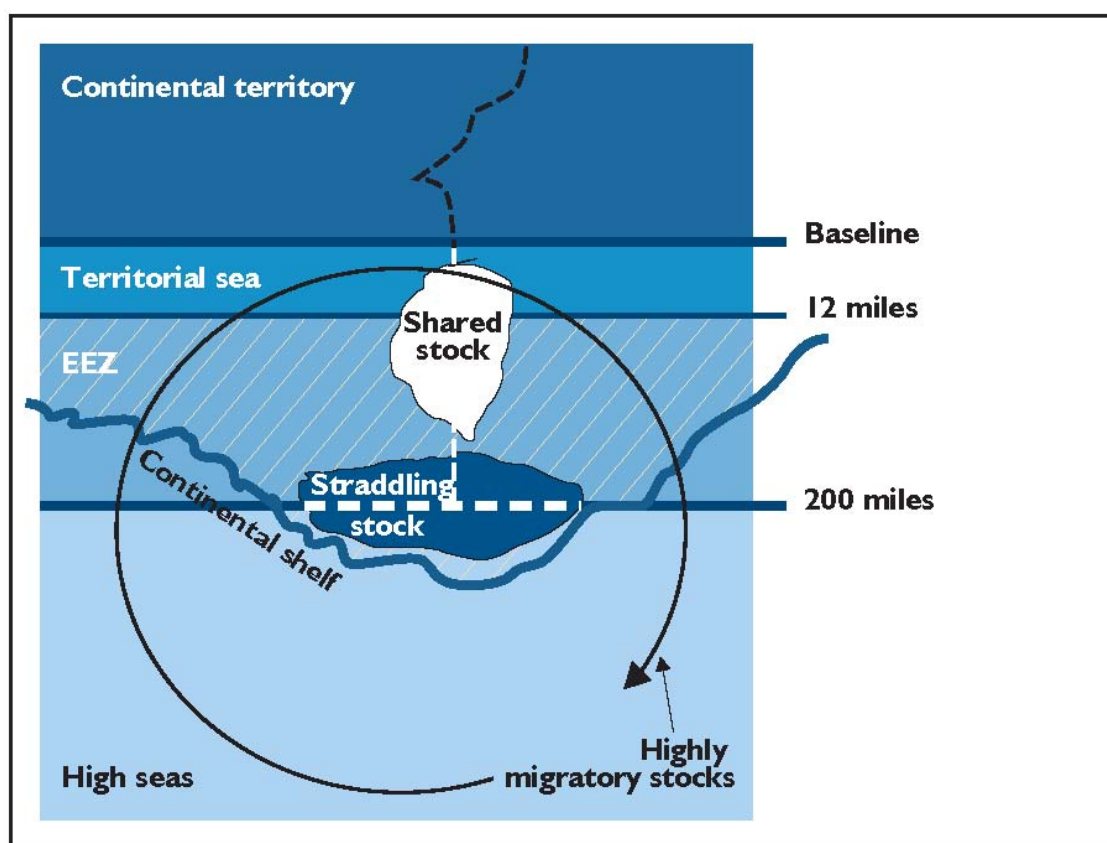


Figure 4. Maritime zones and distribution of shared, straddling and highly migratory fish stocks as defined by the LOSC¹⁰⁴

By virtue of their migratory nature, tunas are considered a “shared fish stock”. This term is often used by fisheries lawyers to refer to the fish stocks reflected in Article 63(1) of the LOSC.¹⁰⁵ This is the sense in which this term will be used in the present

¹⁰⁴ Source: <http://www.fao.org> (accessed 3 June 2010).

¹⁰⁵ Annick Van Houtte, ‘Legal Aspects in the Management of Shared Fish Stocks: A Review’ in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*,

thesis. As a shared fish stock, tunas are thus subject to Article 63(1) of the *LOSC* which stipulates that:

Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks without prejudice to the other provisions of this part [V].

Clearly, the *LOSC* obliges coastal States to establish cooperative arrangements for the management of tuna stocks that are shared across EEZs, as well as stocks that are associated with tuna. It is imperative that for States to discharge the obligation of cooperation to manage tuna, they ought to negotiate, with a view to agreeing to establish appropriate conservation and management measures for the relevant fish stocks.¹⁰⁶ Additionally, the measures adopted for the conservation and development of tuna stocks as a result of such cooperation ought to take into consideration the provisions relating to States' rights and obligations over its EEZ resources.

The *LOSC* does not establish the means by which States are to achieve cooperation among themselves, or the objectives to be achieved through such cooperation, nor does it impose a duty upon States to reach an agreement. However, the sustainability of tuna stocks can hardly be assured without conservation and management arrangements in place between neighbouring States sharing tuna stocks.¹⁰⁷ In practice, it is imperative that an agreement is reached between such States and that measures are adopted for the effective conservation and management of the relevant

Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695 (FAO, 2003) 30. The fish stocks reflected in Article 63(1) have also been referred to as "transboundary", which from a legal perspective would include fish stocks reflected in Articles 63 and 64. According to Hey, the term "transboundary stocks" means that these stocks are not confined to the maritime zones of a single State, Regional Fisheries Organisation, regulatory area or high seas. See Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 1. On the other hand, the FAO Code of Conduct uses "transboundary stocks" to mean "shared stocks". See *FAO Code of Conduct* Section 7.1.3.

¹⁰⁶ Generally, under international law, the duty to cooperate does not involve the duty to reach an agreement as long as the cooperation has been undertaken in good faith. See, Annick Van Houtte, 'Legal Aspects in the Management of Shared Fish Stocks: A Review' in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695 (FAO, 2003) 36.

¹⁰⁷ Moritaka Hayashi, 'The Management of Transboundary Fish Stocks under the LOS Convention' (1993) 8 *International Journal of Marine and Coastal Law* 245, 250.

stocks.¹⁰⁸ The incentive for States to cooperate would not only be to maximise the economic returns from the tuna stocks occurring in their EEZs but also to conserve and manage them in order to ensure the long-term sustainability of such fish stocks.

Although it is challenging to achieve effective cooperation, some States have been able to establish cooperative arrangements to manage tuna stocks that are shared among them. The South Pacific Island States for example, where the most important tropical tuna resources are found, had several incentives to cooperate in the management of their tuna resources at the advent of extended fisheries jurisdiction.¹⁰⁹ First, the tuna resources in the region were (and still are) economically significant to the South Pacific Island States. Secondly, most of the States' intra-EEZ harvests of tuna were (and still are) taken by DWFNS¹¹⁰ from States that are small and scattered over an ocean space of 35 million square kilometres.¹¹¹ Third, these Islands were at low levels of development and had no capacity to monitor such a large ocean area.¹¹² Lastly, the Pacific Island States needed to ensure that Japan which was in the position of a monopolist DWFN within the Pacific Islands region did not play one island State off against the other.¹¹³ These States established the South Pacific Forum Fisheries Agency (FFA) in 1979 to play a facilitative and coordinating role amongst its members.¹¹⁴ The South Pacific Island States have since pursued cooperation through FFA in the areas of

¹⁰⁸ Gordon Munro and Annick Van Houtte, *The conservation and Management of Shared Fish Stocks: Legal and Economic Aspects*, FAO Fisheries Technical Paper No. 465 (FAO, 2005) 16.

¹⁰⁹ Transform Aqorau, 'Cooperative Management of Shared Fish Stocks in the South Pacific' in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695 (FAO, 2003) 59.

¹¹⁰ Foreign States fishing catch over \$1 billion worth of tuna in the Pacific Island waters compared to \$200 million catch of the Pacific Island States. See <http://www.ffa.int/> (accessed 3 June 2010).

¹¹¹ Gordon Munro and Annick Van Houtte, *The conservation and Management of Shared Fish Stocks: Legal and Economic Aspects*, FAO Fisheries Technical Paper No. 465 (FAO, 2005) 31.

¹¹² Ibid.

¹¹³ Ibid.

¹¹⁴ Transform Aqorau, 'Cooperative Management of Shared Fish Stocks in the South Pacific' in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695 (FAO, 2003) 59. FFA is the key regional fisheries agency of the Pacific which gives technical assistance in development of fisheries management policies and the negotiation of fisheries access agreements. It also plays a key role in the collection of fees and the surveillance of EEZs. See also <http://www.ffa.int/> (accessed 3 June 2010).

fisheries management, establishment of minimum terms and conditions of access for DWFNs and in monitoring, control and surveillance.¹¹⁵

2.4.1.2 Straddling Stocks

Tunas also straddle the EEZ of one or more States and the high seas. Hence the term “straddling fish stocks”. Although the LOSC does not use this term, it is defined in Article 63 (2) of the LOSC which reads:

Where the same stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate subregional or regional organizations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area.

As straddling fish stocks, tunas are also found on the high seas. Thus, a necessary requirement of the LOSC and an obligation on States is cooperation to manage tunas both within the EEZ and in the adjacent high seas. As tunas occur on the high seas, they are subject to Article 116 of the LOSC which provides the right of States to fish on the high seas. However, the right of States to fish on the high seas is conditional. Accordingly, States fishing on the high seas for tunas can only engage in fishing on the high seas subject to; their treaty obligations;¹¹⁶ the rights and duties as well as the interests of coastal States provided for, *inter alia*, in article 63(2), and articles 64 to 67;¹¹⁷ and the provisions of section 2 of the LOSC.¹¹⁸ In other words, a State can only exercise its right to fish on the high seas if it has attended to the rights, duties and interests of coastal States in straddling and highly migratory fish stocks like tuna and also cooperate in the conservation and management of the high seas segments of such fish stocks.

The rights and duties referred to above are elaborated in Articles 117-119 of the LOSC. Article 117 which reiterates the high seas provision of the 1958 High Seas

¹¹⁵ Transform Aqorau, ‘Cooperative Management of Shared Fish Stocks in the South Pacific’ in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695 (FAO, 2003) 59.

¹¹⁶ LOSC, Art. 116(a).

¹¹⁷ LOSC, Art. 116(b).

¹¹⁸ LOSC, Art. 116(c).

Fisheries Convention,¹¹⁹ obligates all States to take, or to cooperate with other States in taking, such measures for their respective nationals as may be necessary for the conservation of the living resources of the high seas. In brief, States are obligated to take measures to ensure that their nationals fishing on the high seas conserve the relevant tuna stocks. For these conservation objectives to be achieved, Article 118 of the LOSC requires States to cooperate and establish subregional and regional fisheries organisations. In addition, States whose nationals exploit identical living resources or different living resources in the same area are required to negotiate with a view to taking the measures necessary for the conservation of the living resources concerned.¹²⁰ Article 119(1) specifically provides the conservation requirements of the high seas living resources that States fishing on the high seas must meet.¹²¹ These requirements are aimed at safeguarding the management measures of coastal States in the EEZ such that they are not at risk of being undermined by the activities of vessels fishing on the high seas. However, the provisions of Articles 116-119 are not clear and have been left open to conflicting interpretation.¹²² This may be because high seas resources were not deemed as important as EEZ resources at this time.¹²³

Both coastal States and DWFNs have an interest in the well being of tuna stocks owing to the economic benefits which accrue to them.¹²⁴ DWFNs base their interests on the freedom of fishing on the high seas, while coastal States have sovereign rights over

¹¹⁹ *The High Seas Fisheries Convention*, Preamble, Arts. 1(1) and 6(1).

¹²⁰ *LOSC*, Art. 118.

¹²¹ Article 119 of the *LOSC* concerning living resources of the high seas requires States to adopt measures 1a) based on the best scientific evidence available to them; maintain or restore populations of harvested species at levels which can produce maximum sustainable yield, as qualified by environmental and economic factors, plus the special requirements of developing States, fishing patterns, and interdependence of stocks 1b) consider the effects on species associated with or dependent upon harvested species, 2) contribute and exchange data regularly. These aspects are to be taken in to consideration before the total allowable catch is determined.

¹²² See E Miles and W Burke, 'Pressures on the United Nations Convention on the Law of the Sea of 1982 Arising from New Fisheries Conflicts: The Problem of Straddling Stocks' (1989) 20 *Ocean Development and International Law* 343.

¹²³ Trond Bjørndal and Gordon Munro, *The Management of High Seas Fisheries Resources and the Implementation of the U. N. Fish Stocks Agreement of 1995*, Working Paper No. 06/02, Institute For research in Economics and Business Administration Bergen, February 2002.

¹²⁴ Coastal States have an interest to conserve such stocks, while fishing States have an interest to exploit them (and most likely to conserve and manage them). See Annick Van Houtte, 'Legal Aspects in the Management of Shared Fish Stocks: A Review' in FAO, *Papers presented at the Norway – FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway, 7-10 October 2002, FAO Fisheries Report No. 695 (FAO, 2003) 38.

tuna stocks while in the EEZ.¹²⁵ The requirement in Article 63(2) of the LOSC for these States to ‘seek to agree upon the measures necessary for the conservation of these fish stocks in the adjacent area’ provides an opportunity for cooperation between States to manage tunas on the high seas. However, as in Article 63(1), the LOSC does not elaborate on how such cooperation might be achieved. Article 63(2) also provides only for the conservation of straddling fish stocks on the high seas and not the EEZ. It remains unclear how the adoption of conservation and management measures can be coordinated between the maritime zones. Nonetheless, it is imperative that the measures adopted for the EEZ and those of the high seas must achieve sustainability of the tuna stocks therein.

2.4.1.3 Highly Migratory Species

Tunas are given special attention as highly migratory species under the LOSC because of their biological characteristics. In the context of highly migratory species, the LOSC appears to modify the exclusive jurisdictional and sovereign claims that a coastal state might have.¹²⁶ Article 64 of the LOSC states that:

The coastal State and other States whose nationals fish in the region for highly migratory species listed in Annex1 shall cooperate directly or through appropriate international organizations with the view to ensuring conservation and promoting the objective of optimum utilization of such species through out the region, both within and beyond the exclusive economic zone. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such an organization and participate in its work.

Clearly, the inference is that coastal States do not enjoy exclusive jurisdiction and sovereignty over highly migratory species like tuna within the EEZ, but must cooperate with other States that fish in their respective zones. Article 64 summarises the requirement for the coastal State to discharge its duty to cooperate with other coastal States and DWFNs to ensure its sovereign rights under Articles 56, 61 and 62 of the LOSC are fulfilled with respect to tuna stocks in the region. Cooperation between States

¹²⁵ Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 82.

¹²⁶ William T Burke, ‘Highly Migratory Species in the New Law of the Sea,’ (1984) 14(3) *Ocean Development and International Law* 273, 274.

throughout the region may involve coastal States and DWFNs which may be few in number or quite large. Such States could also occupy an enormous geographic area, as in the Central and Western Pacific.¹²⁷ Such cooperation involves the adoption of conservation and management measures to deal with stocks and fishing in the EEZ and beyond. Thus, the aims of States within the region cooperating are; to establish the total allowable catch;¹²⁸ adopt conservation and management measures that ensure against over-exploitation;¹²⁹ consider effects on associated and dependent species;¹³⁰ contribute and exchange data;¹³¹ and promote optimum utilisation.¹³² Further, it is a concern of the coastal State to determine its harvesting capacity¹³³ and to design the terms and conditions of access to the surplus tuna resources.¹³⁴

The decisions made by the coastal State are of interest to fishing States in the region and other coastal States since they bear on shares of the catch; cost of operation; time of activities; choice of gear; and location of fishing.¹³⁵ As tuna are highly migratory, cooperation in this context should aim at a unified management regime applicable to stocks within and beyond the EEZ.¹³⁶ The States involved therefore need to be united in their actions and regulatory measures if they are to achieve their objectives.¹³⁷ Thus, it is necessary for the actions of such States to be preceded by communications designed to lead to agreed measures to be implemented by the coastal States within the EEZ and by fishing States beyond, in order for them to be consistent with the requirements of the LOSC.¹³⁸

¹²⁷ William T Burke, 'Highly Migratory Species in the New Law of the Sea,' (1984) 14(3) *Ocean Development and International Law* 273, 282.

¹²⁸ LOSC, Art. 61(1).

¹²⁹ LOSC, Art. 61(2).

¹³⁰ LOSC, Art. 61(4).

¹³¹ LOSC, Art. 61(5).

¹³² LOSC, Art. 62(1).

¹³³ LOSC, Art. 62(2).

¹³⁴ LOSC, Art. 61(4).

¹³⁵ William T Burke, 'Highly Migratory Species in the New Law of the Sea,' (1984) 14(3) *Ocean Development and International Law* 273, 282.

¹³⁶ Ibid.

¹³⁷ Ibid.

¹³⁸ William T Burke, 'Highly Migratory Species in the New Law of the Sea,' (1984) 14(3) *Ocean Development and International Law* 273, 283.

The duty to cooperate as provided for under Articles 63 and 64 of the LOSC can be compromised by the exclusive jurisdiction and sovereignty claims conferred by Articles 56 and 57 of the LOSC. It is not inconceivable that coastal States may seek to assert their exclusive rights over other States seeking to cooperate under the auspices of Articles 61 to 64 of the LOSC. Complicating matters, Article 297 of the LOSC also prohibits review of the coastal State's exercise of its LOSC discretionary powers. It is entirely possible for the coastal State to refuse to cooperate with other States on matters relating to allowable catches. After all Article 61 provides the coastal State with the authority to determine its own allowable catch for itself. Article 297 of the LOSC arises to prohibit a review of the exercise of that kind of discretionary power. Nonetheless, the management of straddling and highly migratory fish stocks and the obligations of coastal States and DWFNs are often not subject to enforceable management regimes outside the EEZ.¹³⁹ Cooperative management of highly migratory species like tuna is therefore considered necessary for their long-term sustainability.¹⁴⁰

The success of the LOSC with respect to management of straddling and highly migratory fish stocks was tenuous at best. A number of difficulties would ensue related to the instrument's failure to successfully anticipate the problems associated with the extension of fisheries jurisdiction by coastal States. Although the establishment of the EEZ brought a significant portion of marine fisheries resources under the jurisdiction of coastal States, the LOSC did not give much consideration to the management of the high seas segment of straddling and highly migratory fish stocks.¹⁴¹ The LOSC therefore provided general principles for the conservation, management and optimum utilisation of these fish stocks which States were required to implement through

¹³⁹ Evelyn Meltzer, 'Global overview of Straddling and Highly Migratory Fish Stocks: The Nonsustainable Nature of High Seas Fisheries' (1994) 25(3) *Ocean Development and International Law* 255, 256.

¹⁴⁰ Gordon Munro, 'On Management of Shared Fish Stocks' in FAO, Report of the *Norway-FAO Expert Consultation on the Management of Shared Fish Stocks*, Bergen, Norway 7-10 October 2002; Gordon Munro, 'Economics, the 1995 UN Fish Stocks Agreement, and the Future of Transboundary Fishery Resource Management' in *Proceedings of the XIVth Annual Conference of the European Association of Fisheries Economists*, Faro, Portugal, 25-27 March 2002.

¹⁴¹ At the time UNCLOS III was in process, it was believed that only 10% of the world's fishable capture fishery resources were found on the high seas. See Gordon Munro, Annick Van Houtte and Rolf Willmann, *The conservation and management of shared fish stocks: legal and economic aspects*, FAO Fisheries Technical Paper No. 465 (FAO, 2004) 34.

cooperation.¹⁴² The inadequacies of the LOSC with respect to the management of these fish stocks and the resulting challenges are discussed in the following section.

2.4.2 Management of Tuna on the High Seas

The extension of fisheries jurisdiction by coastal States gave way to greater fishing activities (and competition for stocks) on the high seas by DWFNs,¹⁴³ thus increasing the pressure on marine fisheries resources and perpetuating their decline.¹⁴⁴ These high seas fishing activities are also thought to have affected the resilience of the fisheries resources in the EEZ.¹⁴⁵ The unregulated activities of DWFNs on the high seas did not only pose challenges to coastal States' fisheries management, but they also undermined coastal States' conservation efforts and reduced the anticipated economic benefits for coastal States from EEZ fisheries resources such as tuna.¹⁴⁶

While the LOSC mandates States to cooperate for the conservation and management of straddling and highly migratory fish stocks like tuna within the EEZ and beyond, its provisions were considered inadequate and ineffective with respect to mandating the cooperative management of the high seas segment of these fish stocks.¹⁴⁷ The LOSC failed to specify how competences should be distributed among and between the cooperating coastal States and States fishing in the adjacent areas of specific EEZs.¹⁴⁸ Additionally, the LOSC provisions were not clear concerning the rights of

¹⁴² Maguire, et al, *The State of World Highly Migratory, Straddling and other High Seas Fishery Resources and Associates Species*, FAO Fisheries Technical Paper No. 495 (FAO, 2006) 1.

¹⁴³ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 299.

¹⁴⁴ Maguire, et al, *The State of World Highly Migratory, Straddling and other High Seas Fishery Resources and Associates Species*, FAO Fisheries Technical Paper No. 495 (FAO, 2006) 1; Josè A. de Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* (Martinus Nijhoff Publishers, 1997) 174.

¹⁴⁵ André Tahindro, 'Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks' (1997) 28 *Ocean Development and International Law* 1, 2.

¹⁴⁶ Lawrence Juda, 'The United Nations Fish Stocks Agreement: Current issues and key themes' in Olave Schram Stokke and Oystein B. Thommessen (eds), *Yearbook of International Co-operation on Environment and Development* 2001/02 (Earthscan Publications) 53, 53.

¹⁴⁷ Gordon Munro, Annick Van Houtte and Rolf Willmann, *The conservation and management of shared fish stocks: legal and economic aspects*, FAO Fisheries Technical Paper No. 465 (FAO, 2004) 37.

¹⁴⁸ Josè A de Yturriaga, *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea* (Martinus Nijhoff Publishers, 1997) 174; T Bjorndal and G R Munro, 'The Management of high-seas Fisheries Resources and the Implementation of the UN Fish Stocks Agreement of 1995' in Tom Tietenberg and Henk Folmer (eds), *The International Yearbook of Environmental and Resource Economics* (2003/2004): A Survey of Current Issues, Cheltenham, Edward Elgar: 1-35.

coastal States if an agreement on conservation and management measures of high seas fish stocks is not reached, neither did they adequately address objectives of ecosystem protection and conservation of biological diversity.¹⁴⁹

The sustainable management of fishery resources like tuna which are exploited by several States requires the support of institutional arrangements that would facilitate decision making and interaction between such States to aid in achieving judicious cooperation. The LOSC did not provide a supportive framework for the institutional arrangements required to ensure rational cooperation for the management of straddling and highly migratory fish stocks like tuna.¹⁵⁰ As a result of these weaknesses of the LOSC, it became difficult to establish effective cooperative regimes for such fishery resources,¹⁵¹ for lack of appropriate enforcement mechanisms for high seas fisheries. It became evident that fishing States were evading controls by reflagging their vessels; data on high seas stocks and catches were unreliable; and fleet sizes were excessive.¹⁵²

In as much as a coastal State has jurisdiction over tuna resources in the EEZ and can adopt conservation and management measures to ensure their sustainability, the same cannot be said for the high seas segment of the same fish stocks. The cooperative management arrangements for such fish stocks can be undermined by non-participating States. For instance, if a single State was attempting to conserve tuna stocks located within its waters or attempted to govern its own State's fishing activities in a manner calculated to sustain the longevity of the tuna stock, non-participating states will have the opportunity to reap the benefits as what is described as "free riding".¹⁵³ "Free riding" threatens the cooperative management regimes for straddling and highly migratory fish stocks like tuna.¹⁵⁴

¹⁴⁹ Patricia Birnie and Alan Boyle, *International Law and the Environment* (Oxford University Press 2nd ed, 2002) 664.

¹⁵⁰ Ibid 672.

¹⁵¹ Gordon Munro, Annick Van Houtte and Rolf Willmann, *The conservation and management of shared fish stocks: legal and economic aspects*, FAO Fisheries Technical Paper No. 465 (FAO, 2004) 37.

¹⁵² Patricia Birnie and Alan Boyle, *International Law and the Environment* (Oxford University Press 2nd ed, 2002) 671.

¹⁵³ Robin Allen, *International Management of Tuna Fisheries: Arrangements, Challenges and a Way Forward*, FAO Technical Paper No. 536 (FAO, 2010) 2; Gordon Munro, Annick Van Houtte and Rolf Willmann, *The conservation and management of shared fish stocks: legal and economic aspects*, FAO Fisheries Technical Paper No. 465 (FAO, 2004) 15.

¹⁵⁴ Gordon R Munro, 'The Management of Internationally Shared Fish Stocks: A Law and Economics Approach' in Aldo Chircop, Ted L McDorman and Susan J Rolston (eds), *The Future of Ocean Regime-Building: Essays in Tribute to Douglas M Johnson* (Martinus Nijhoff Publishers, 2009) 435.

A number of fisheries were affected by the lack of effective cooperative management regimes for high seas segments of such fish stocks resulting from the inadequacies of the LOSC. For example, China, Korea, Japan and Poland commenced fishing in the high seas of the “Peanut Hole” area located in the Sea of Okhotsk after 1991.¹⁵⁵ This area is surrounded by the EEZ of the Russian Federation. The most important commercial fish stock in this area is the Alaska Pollock which straddles the Russian EEZ and the Peanut Hole.¹⁵⁶ As no international agreement regarding the management of these stocks could be reached between the States concerned, Russia claimed to impose a moratorium on fishing activities in the Peanut Hole area and also to extend coastal State control in 1993.¹⁵⁷ This was because the Alaska Pollock was being overfished on the high seas and becoming less abundant in the Russian EEZ. As a result of the ban, some DWFNs voluntarily complied while those ones that did not lost their quotas to fish in Russia’s EEZ.¹⁵⁸ Another example is the cod stock of the “Loophole” in the Barents Sea which was impacted by unregulated harvesting on the high seas in the early 1990s.¹⁵⁹

2.4.2.1 Agenda 21

The conflicts that resulted from the unregulated fishing activities on the high seas and the exploitation of straddling and highly migratory fish stocks necessitated the need for more responsible fishing, hence the adoption of Agenda 21 at the United

¹⁵⁵ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 307.

¹⁵⁶ Alex G. Oude Elferink, ‘The Sea of Okhotsk Peanut Hole De facto Extension of coastal States Control’ in Olav Schram Stokke (ed), *Governing High Seas Fisheries* (Oxford University Press, 2001) 179.

¹⁵⁷ Ibid 182. According to the preamble of the resolution, this approach was taken because international law did not explicitly regulate the regime of fisheries in an area surrounded by the EEZ of one State.

¹⁵⁸ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 307. Other examples of the high seas stocks that lacked effective cooperative management include; the groundfish stocks of Grand Banks of Newfoundland in the North-West Atlantic and the Pollock resources of the “Donut Hole” in the Bering Sea (Russia and USA).

¹⁵⁹ Other Vessels operating in the region (under flags of convenience) were from the European Community, Greenland and Faroe Islands. See Olav Schram Stokke, ‘The Loophole of the Barents Sea Fisheries Regime’ in Olave Schram Stokke (ed) *Governing High Seas Fisheries* (Oxford University Press, 2001) 273. The Loophole is located between the EEZs of Norway and Russia and cod is a shared and straddling stock in this region. The existing regime proved ineffective in dealing with the challenge of new comers in the Barents Sea. See Olav Schram Stokke, ‘The Loophole of the Barents Sea Fisheries Regime’ in Olave Schram Stokke (ed) *Governing High Seas Fisheries* (Oxford University Press, 2001) 276.

Nations Conference on Environment and Development in 1992.¹⁶⁰ Agenda 21 underpins the responsibilities of flag States and cooperation among States at sub-regional, regional and global levels to manage straddling and highly migratory fish stocks like tuna.¹⁶¹ The development of the UN Fish Stocks Agreement was prompted by the recommendations of paragraph 17.49 of Agenda 21.¹⁶² Based on the recommendations of paragraph 17.50 of Agenda 21, the Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks was convened in 1993, with a view to promoting effective implementation of the provisions of the United Nations Convention on the Law of the Sea on Straddling Fish Stocks and Highly Migratory Fish Stocks.¹⁶³

2.4.2.2 The UN Fish Stocks Agreement

The UN Fish Stocks Agreement was adopted at the sixth session of the United Nations Conference of Straddling Fish Stocks and Highly migratory Fish Stocks in 1995. The objective of the UN Fish Stocks Agreement is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the convention.¹⁶⁴

¹⁶⁰ Agenda 21 is a non-binding programme for sustainable development managed by the United Nations. It is to be implemented globally, nationally and locally by the relevant institutions. Chapter 17 of Agenda 21 is devoted to “Protection of oceans, all kinds of seas, including enclosed and semi-closed seas and coastal areas, and the protection, rational use and development of their living resources. Section C of this chapter deals specifically with the sustainable use and conservation of marine living resources of the high seas. <http://earthwatch.unep.ch> (accessed 9 June 2010).

¹⁶¹ Agenda 21, Chapter 17, Section C, paragraph 17.45. The problems resulting from the inadequacy of the LOSC were identified by Agenda 21 as; enforcement of effective conservation measures, unregulated fishing, overcapitalization, excessive fleet size, vessel reflagging to escape controls, insufficiently selective gear, unreliable data bases and lack of cooperation between States. <http://earthwatch.unep.ch> (accessed 9 June 2010).

¹⁶² Agenda 21, Chapter 17, paragraph 17.49 recommends that; States should take effective action, including bilateral and multilateral cooperation, where appropriate at the subregional, regional and global levels, to ensure that high seas fisheries are managed in accordance with the provisions of the United Nations Convention on the Law of the Sea. <http://earthwatch.unep.ch> (accessed 9 June 2010).

¹⁶³ Agenda 21, Chapter 17, paragraph 17.50 states that; States should convene, as soon as possible, an intergovernmental conference under United Nations auspices, taking into account relevant activities at the subregional, regional and global levels, with a view to promoting effective implementation of the provisions of the United Nations Convention on the Law of the Sea on straddling fish stocks and highly migratory fish stocks. The conference, drawing, inter alia, on scientific and technical studies by FAO, should identify and assess existing problems related to the conservation and management of such fish stocks, and consider means of improving cooperation on fisheries among States, and formulate appropriate recommendations. The work and the results of the conference should be fully consistent with the provisions of the United Nations Convention on the Law of the Sea, in particular the rights and obligations of coastal States and States fishing on the high seas. <http://earthwatch.unep.ch> (accessed 9 June 2010).

¹⁶⁴ *UN Fish Stocks Agreement*, Art. 2.

It also provides a framework for cooperation among States by establishing the relevant measures in this regard. In the words of Fontaubert and Lutchman: “the UN Fish Stocks Agreement goes a long way towards shifting the regime of the high seas from one of relative laissez-faire to one where States are required to collaborate through regional fisheries management organisations and arrangements.”¹⁶⁵

Although the UN Fish Stocks Agreement applies to the conservation and management of straddling and highly migratory fish stocks on the high seas,¹⁶⁶ Articles 5, 6 and 7 of the Agreement apply also to such stocks in the EEZ. For that reason, coastal States are under an obligation to apply the general fisheries conservation and management principles in Article 5, the precautionary approach,¹⁶⁷ and the adoption of compatible conservation and management measures.¹⁶⁸

Part III of the UN Fish Stocks Agreement provides the mechanisms for giving effect to the duty to cooperate in the conservation and management of straddling and highly migratory fish stocks on the high seas. In this part, the UN Fish Stocks Agreement recognises the role of RFMOs in providing the mechanism for achieving cooperation between and among States participating in tuna fisheries.¹⁶⁹ The membership of RFMOs consists of coastal, flag and market States. The UN Fish Stocks Agreement sets out the mechanisms for setting up RFMOs,¹⁷⁰ and elaborates on their responsibilities and functions.¹⁷¹

With respect to the management of tuna, five RFMOs have been established. These are; the Inter-American Tropical Tuna Commission (IATTC) established in 1949,¹⁷² the International Commission for the Conservation of Atlantic Tuna (ICCAT) established in 1996,¹⁷³ the Indian Ocean Tuna Commission (IOTC) established in

¹⁶⁵ Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 49.

¹⁶⁶ *UN Fish Stocks Agreement*, Art. 3 (1).

¹⁶⁷ *UN Fish Stocks Agreement*, Art. 6.

¹⁶⁸ *UN Fish Stocks Agreement*, Art. 7.

¹⁶⁹ *UN Fish Stocks Agreement*, Art. 8 (1).

¹⁷⁰ *UN Fish Stocks Agreement*, Art.9.

¹⁷¹ *UN Fish Stocks Agreement*, Art.10.

¹⁷² See *Convention for the Establishment of an Inter-American tropical Tuna Commission* of 31 May 1949 (entered into force March 3, 1950), 80 UNTS 4.

¹⁷³ See *International Convention for the Conservation of Atlantic Tuna* of 14 May 1966 (entered into force 21 March 1969), UN/LEG/SER.B/16 (483-491).

1993,¹⁷⁴ the Commission for the Conservation of Bluefin Tuna (CCSBT) established in 1994,¹⁷⁵ and the Commission for the Conservation and Management of Highly migratory Fish Stocks in the Western and Central Pacific Ocean (WCPFC) established in 2004.¹⁷⁶

2.5 The Duty to Cooperate

The duty to cooperate is a natural corollary of the duty to conserve a shared natural resource, in that, conservation of an open access regime will only be possible where all exploiting States agree on, and implement, measures to regulate their exploitation.¹⁷⁷ It is argued that an improved level of cooperation is socially desirable since an increased cooperation level leads to an increased steady-state fish stock and also in the total rent of the fishery.¹⁷⁸ The following section examines the ‘duty to cooperate’ in respect of the conservation and management of tuna stocks.

The concept of the duty to cooperate under the LOSC is multilayered in that it is intricately tied to the duty to negotiate and the duty “not to discriminate”.¹⁷⁹ This duty must be placed in the context of the rights and duties of the coastal State. In this regard, the coastal State has a duty of conserving and managing the tuna resources in its EEZ, promoting optimum utilization and at the same time determine the total allowable catch which is the most fish that can be landed in its EEZ.¹⁸⁰ Although, these rights and obligations appear to be entirely exclusive, they are subject to onerous conditions that may only be achieved through cooperation with other States. States are therefore

¹⁷⁴ See *Agreement for the establishment of the Indian Ocean Tuna Commission* of 25 November 1993 (entered into force 27 March 1966). <http://www.iotc.org> (accessed 10 June 2010).

¹⁷⁵ See *Convention of the Conservation of Southern Bluefin Tuna* of May 1993 (entered into force 20 May 1994). http://www.ccsbt.org/docs/pdf/about_the_commission/convention.pdf (accessed 10 June 2010).

¹⁷⁶ See *Convention on the Conservation and Management of Highly Migratory fish Stocks in the Western and Central Pacific Ocean* of 5 September 2000 (entered into force 19 June 2004).

¹⁷⁷ Rosemary Rayfuse, ‘Countermeasures and High Seas Fisheries Enforcement’ (2004) *Netherlands International law Review* 41, 54.

¹⁷⁸ Le Kim Long, ‘Regional fisheries management organisation with an endogenous minimum participation level for cooperation in straddling stock fisheries’ (2009) 97 (1-2) *Fisheries Research* 42, 42.

¹⁷⁹ Louis B. Sohn and John E. Noyes, *Cases and Materials on the law of the Sea* (Transnational Publishers, 2004) 735.

¹⁸⁰ Maria Gavouneli, *Functional Jurisdiction in the Law of the Sea* (Martinus Nijhoff Publishers, 2007) 101.

required to seek, in good faith, to develop joint conservation and management measures for tuna stocks in the EEZ and beyond.¹⁸¹

The duty to cooperate is clearly encompassed by Articles 63, 64, 117 and 118 of the LOSC as well as Article 8 of the UN Fish Stocks Agreement. Under the LOSC, States are required to cooperate to establish sub-regional or regional organizations for managing and conserving tuna stocks.¹⁸² Under the UN Fish Stocks Agreement, the duty to cooperate requires not only an obligation to create RFMOs, but also that unless RFMO members or non-members agree to the management and conservation measures set by the RFMOs they will not be able to fish in the applicable region.¹⁸³ This raises the question of how third States (non-RFMO members) are to participate in the work of RFMOs.

The provision of Article 63(2) of the LOSC enables third States to comply with their duty to cooperate for the conservation of straddling and highly migratory fish stocks like tuna. As previously discussed in section 2.4.1, Article 63(2) requires States to ‘...seek, either directly or through appropriate subregional or regional organisations, to agree..’, while Article 64(1) requires that States ‘.....participate in its work’, thereby making it possible for non-member States to participate in good faith in the work of RFMOs.¹⁸⁴ For that matter, RFMOs play an important role as a medium through which States can negotiate and adopt conservation measures with respect to tuna.

Although Articles 63 and 64 of the LOSC call for a duty to cooperate with respect to the management of tuna stocks in the regions described, they fall short on guidance. For example, the LOSC does not provide for legal consequences in the event that cooperation among States is not achieved.¹⁸⁵ It therefore follows that cooperation is primarily a process of negotiation between the relevant States.¹⁸⁶ In which case, third

¹⁸¹ Tore Henriksen, ‘Revisiting the Freedom of Fishing and Legal Obligations on States not Party to Regional Fisheries Management Organisations’ (2009) 48 *Ocean Development & International Law* 80, 87.

¹⁸² LOSC, Art. 64.

¹⁸³ UN Fish Stocks Agreement, Art. 8(4); Myron H. Nordquist; John Norton Moore and Tommy Thong Bee Koh, *Freedom of Seas, Passage of Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff, 2008) 581.

¹⁸⁴ Ted L McDorman, ‘Canada and Whaling: An Analysis of Article 65 of the Law of the Sea Convention’ (1998) 29(2) *Ocean Development & International Law* 179, 186.

¹⁸⁵ Orrego Vicuna, *The Changing International Law of High seas Fisheries* (Cambridge University Press, 1999) 200.

¹⁸⁶ Robin Churchill and Geir Ulfstein, *Marine Management in Disputed Areas: The Case of the Barents Sea* (Routledge, 1992) 98.

States are not compelled to comply with the conservation and management measures adopted by RFMOs, as the duty to negotiate is a duty of behaviour rather than a result.¹⁸⁷

Article 118 of the LOSC obliges States to enter into negotiations with a view to taking the necessary measures for the conservation of high seas living resources. The obligation to negotiate does not contain an absolute requirement to reach agreement. Although third States are not compelled to comply with the conservation and management measures adopted by RFMOs, it is imperative that the negotiation process carried out in good faith would require their positive participation such as sharing expertise, experience or information to assist the work of the RFMO if it is to be meaningful.¹⁸⁸ Cooperation is largely a matter of negotiation in its initial stages.¹⁸⁹ Fisheries experts contend that there is a legal content in the obligation to negotiate as evidenced in the 1969 *North Sea Continental Shelf* cases.¹⁹⁰

2.5.1 Mechanisms for International Cooperation

The UN Fish Stocks Agreement operationalises the duty to cooperate as established in the LOSC.¹⁹¹ The Agreement is more meticulous on the duty to cooperate

¹⁸⁷ Tore Henriksen, 'Revisiting the Freedom of Fishing and Legal Obligations on States not Party to Regional Fisheries Management Organisations' (2009) 48 *Ocean Development & International Law* 80, 88; Jose A. Yturriaga, *The International Regime of Fisheries: From UNCLOS to the Presential Sea* (Martinus Nijhoff Publishers, 1997) 160.

¹⁸⁸ Ted L. McDorman, 'Canada and Whaling: An Analysis of Article 65 of the Law of the Sea Convention' (1998) 29(2) *Ocean Development & International Law* 179, 187.

¹⁸⁹ Erik Jaap Molenaar, 'The Concept of "Real Interest" and Other Aspects of Cooperation through Regional Fisheries Mechanisms' (2000) 15(4) *The International Journal of Marine and Coastal Law* 475, 482.

¹⁹⁰ See *The North Sea Continental Shelf, Judgement, International Court of Justice Report*, 1969, p. 3, Paragraph 83-101, regarding the Judgement on the *North Sea Continental Shelf* cases related to delimitation of the continental shelf between the Federal Republic of Germany and Denmark on the one hand, and between the Federal Republic of Germany and the Netherlands on the other. The International Court of Justice stated that: the Parties were under an obligation to enter into negotiations with a view to arriving at an agreement and not merely to go through a formal process of negotiation as a sort of prior condition for the automatic application of a certain method of delimitation in the absence of agreement; they were so to conduct themselves that the negotiations were meaningful, which would not be the case when one of them insisted upon its own position without contemplating any modification of it. This obligation was merely a special application of a principle underlying all international relations, which was moreover recognized in Article 33 of the *Charter of the United Nations* as one of the methods for the peaceful settlement of international disputes. See also, Andre Tahindro, 'Conservation and Management of Transboundary Fish Stocks: Comments in the Light of the Adoption of the 1995 Agreement for the Conservation of Straddling Fish Stocks and Highly Migratory Fish Stocks' (1997) 28 *Ocean Development & International Law* 1, 19.

¹⁹¹ Rosemary Gail Rayfuse, *Non-Flag State Enforcement in High Seas Fisheries* (Martinus Nijhoff Publishers, 2004) 43.

and provides the mechanisms that give effect to this duty.¹⁹² Article 8 of the UN Fish Stocks Agreement builds on Articles 63(2) and 64 of the LOSC with respect to the conservation and management of highly migratory and straddling fish stocks. It also builds on Articles 117-119 of the LOSC in respect of the duty to cooperate on the high seas. Article 8 (3) of the UN Fish Stocks Agreement provides States with an interest in a particular high seas straddling and highly migratory fish stock with the liberty to subscribe to RFMOs or arrangements establishing conservation and management measures with respect to such stocks. Moreover, in any region where there is no RFMO or arrangements, States are required to cooperate with a view to creating one or the other or both.¹⁹³

Articles 9 and 10 of the UN Fish Stocks Agreement provide for more definitive cooperation. Article 9 contemplates a situation in which an RFMO has not yet been established and provides the aspects that States cooperating in the formation of an RFMO are required to consider. States are thus required to agree on the stocks to which the conservation and management measures adopted apply, and the area of application.¹⁹⁴ Further, States are also to agree on the relationship between the work of the new organisation or arrangement and the role, objectives and operations to already existing fisheries management organisations,¹⁹⁵ and also on the mechanism by which the new organisation will obtain scientific advice and review the status of stocks.¹⁹⁶

Article 10 of the UN Fish Stocks Agreement, stipulates the requirements for States in fulfilling their obligation to cooperate through RFMOs or other arrangements. These requirements include, *inter alia*, agreeing on, and complying with conservation and management measures that ensure the long-term sustainability of straddling fish stocks and highly migratory fish stocks;¹⁹⁷ agreeing on participatory rights such as

¹⁹² *UN Fish Stocks Agreement*, Part III.

¹⁹³ Article 8(5) of the *UN Fish Stocks Agreement*, reads: Where there is no subregional or regional fisheries management organization or arrangement to establish conservation and management measures for a particular straddling fish stock or highly migratory fish stock, relevant coastal States and States fishing on the high seas for such stock in the subregion or region shall cooperate to establish such an organisation or enter into other appropriate arrangements to ensure conservation and management of such stock and shall participate in the work of the organisation or arrangement.

¹⁹⁴ *UN Fish Stocks Agreement*, Art. 9(a and b).

¹⁹⁵ *UN Fish Stocks Agreement*, Art. 9(1c).

¹⁹⁶ *UN Fish Stocks Agreement*, Art. 9(1d).

¹⁹⁷ *UN Fish Stocks Agreement*, Art. 10(a).

allocation of allowable catch;¹⁹⁸ standards for collection, reporting, verification and exchange of data,¹⁹⁹ and establish cooperative mechanisms for effective monitoring, control, surveillance and enforcement.²⁰⁰

Moreover, Article 17 of the UN Fish Stocks Agreement states that non-members who do not apply the conservation and management rules of RFMOs are nonetheless obliged to cooperate with them under the provisions of both the LOSC and the UN Fish Stocks Agreement.²⁰¹ Such a State shall not authorise vessels flying its flag to engage in fishing operations for the straddling fish stocks or highly migratory fish stocks which are subject to the conservation and management measures established by such organisation or arrangement.²⁰²

The duty to cooperate and its implications for non-contracting States raises the question of whether or not it violates the principle of *pacta tertiis*. This principle maintains that treaties may only bind those who are parties to the relevant treaty and may not bind third parties.²⁰³ The fundamental idea is that, a sovereign State may only incur legal obligations if it consents to those legal obligations.²⁰⁴ However in the context of the LOSC and the UN Fish Stocks Agreement, member States implicitly accept the duty to cooperate under any instrument or regulatory framework arising under these instruments since they accept the LOSC and the UN Fish Stocks Agreement and all of its rules of reference and instruments created under it.²⁰⁵

¹⁹⁸ UN Fish Stocks Agreement, Art. 10(b).

¹⁹⁹ UN Fish Stocks Agreement, Art. 10(e).

²⁰⁰ UN Fish Stocks Agreement, Art. 10(h).

²⁰¹ Article 17(1) of the UN Fish Stocks Agreement, states: A State which is not a member of a subregional or regional fisheries management organisation or is not a participant in a subregional or regional fisheries management arrangement, and which does not otherwise agree to apply the conservation and management measures established by such organisation or arrangement, is not discharged from the obligation to cooperate, in accordance with the Convention and this Agreement, in the conservation and management of the relevant straddling fish stocks and highly migratory fish stocks.

²⁰² UN Fish Stocks Agreement, Art. 17(2).

²⁰³ Vienna Convention on the Law of Treaties, adopted 23 May 1969, Article 34. 1155 UNTS 331 (entered into force 27 January 1980); See Erik Franckx, *Pacta Tertiis and the Agreement for the Implementation of the Straddling and Highly Migratory Fish Stocks Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, FAO Legal Papers No. 8 (FAO, 2000) 5.

²⁰⁴ Christine Chinkin, *Third Parties in International Law* (Clarendon Press, 1993) 25.

²⁰⁵ Jorn-Ahrend Witt, *Obligations and Control of Flag States: Developments and Perspectives* (LIT Verlag Munster, 2008) 62.

The concept of the ‘duty to cooperate’ within the meaning of the LOSC and the *UN Fish Stocks Agreement* is therefore a unique application of international law. It encapsulates the idea that the conservation, management and utilisation of tuna stocks requires multi-State cooperation on a number of levels. It also assumes that all States have a common interest in the conservation and management of highly migratory fish stocks such as tuna. Cooperation as reflected in the LOSC and the UN Fish Stocks Agreement is instructive in this regard. Although, competing interests among DWFNs and coastal States can compromise effective cooperation, a cooperative approach that balances the interests of coastal States and DWFNs would be desirable. For this reason the UN Fish Stocks Agreement calls for the creation of RFMOs to facilitate cooperation. Cooperation is entirely germane to the conservation and management of tuna.

2.5.2 Compatibility of Conservation and Management Measures Across Maritime Jurisdictions

Article 7(2) of the UN Fish Stocks Agreement provides that conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of the straddling fish stocks and highly migratory fish stocks in their entirety.²⁰⁶ This article captures the idea of reciprocity by providing for the implementation of measures within the EEZ and on the high seas that are comparable.

The term ‘compatible’ is not defined by the UN Fish Stocks Agreement. For the purposes of this thesis ‘compatible’ means that conservation and management measures applied to tuna stocks in high seas areas are to be consistent with those applied by States in areas under their jurisdiction. This definition relates to the broad migratory range of tunas across jurisdictional boundaries. Compatible conservation and management measures across these jurisdictional zones are thus to be established in the framework of the cooperative mechanisms discussed in the previous section (2.5.1).

Accordingly, it is implied that the application of the compatible provision should not lessen the effectiveness of rights or obligations of the provision with which it is to

²⁰⁶ *UN Fish Stocks Agreement*, Art. 7(2).

be compatible.²⁰⁷ The fundamental idea is that, the application of the measures of both regimes should achieve a similar if not an equal result. In the tuna industry where interests among the participating States are in conflict, a delicate balancing act is required. Cooperation is regarded by the international legal instruments as a means of balancing such conflicting interests so as to achieve compatibility among the different legal regimes of the participating and interested States.

The UN Fish Stocks Agreement enumerates several factors that States need to take into account when determining compatible conservation and management measures for tuna stocks. These factors include, *inter alia*, previously agreed measures established and applied to tuna stocks by coastal States and DWFNs, as well as measures established by RFMOs,²⁰⁸ the biological unity of tuna stocks including the geographical particularities of the region concerned (zonal attachment),²⁰⁹ the respective dependence of the coastal States and DWFNs on the stocks concerned and on the impact of management measures on the resources as a whole.²¹⁰ In connection with this, Article 116 of the LOSC obliges DWFNs not to undermine the management efforts of coastal States with respect to tuna stocks on the high seas, by subjecting the freedom of fishing on the high seas to the rights, duties and interests of coastal States.²¹¹

The requirement of the UN Fish Stocks Agreement for compatibility of the EEZ and the high seas regime is recognition of the need to manage tuna stocks in their entirety. It also underscores the interconnectedness of the ecosystem. Accordingly, Hey argues that for conservation measures to be effective, they ought to be applied to tuna stocks throughout their range, irrespective of the legal regimes applicable to the ocean areas in which the tuna stocks occur.²¹² Essentially, States participating in the fisheries

²⁰⁷ Alex G Oude Elferink, 'The determination of compatible conservation and management measures for straddling and highly migratory fish stocks' (2001) 5 *Max Planck Yearbook of United Nations Law* 551, 557.

²⁰⁸ *UN Fish Stocks Agreement*, Article 7(2)(b) and (c).

²⁰⁹ *UN Fish Stocks Agreement*, Article 7(2)(d).

²¹⁰ *UN Fish Stocks Agreement*, Article 7(2)(f)).

²¹¹ C C Joyner and P N De Cola, 'Chile's Presential Sea Proposal: Implications for Straddling Stocks and the International Law of Fisheries' in André Tahindro, 'Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks' (1997) 28 *Ocean Development and International Law* 1-58. See Arts. 63(2) and 64 of the LOSC for the rights, duties, and interests of coastal States.

²¹² Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 16.

for tuna have a duty to cooperate so that conservation and management measures are compatible. The imposition of the requirement for compatible measures and the general conservation obligations in Article 5 of the UN Fish Stocks Agreement, underscore the connection between the EEZ and the high seas management of tuna stocks. This aspect is reinforced by other international instruments.²¹³

As established earlier, tuna stocks may be impacted by the fishing activities occurring across the high seas and EEZ.²¹⁴ The rationale for compatible measures between these maritime zones is to ensure that the measures applied in these zones can function together towards the effective management of tuna fisheries because of their biological unity,²¹⁵ especially since the interests of DWFNs in tuna fisheries may vary from that of coastal States. The measures established for the high seas areas and those adopted in the EEZ may be similar or, if they differ they must have an equivalent effect.²¹⁶

Although the UN Fish Stocks Agreement establishes the principle of compatibility, it does not give precedence of RFMOs over coastal States or vice versa, in the establishment of conservation and management measures for tuna stocks. Consequently, there is a difficulty of how these measures could be harmonised in order to achieve compatibility measures. This decision is left to coastal States and individual RFMOs within their own unique circumstances.

The difficulty that RFMOs may be faced with regarding the management of tuna stocks in their entirety is that coastal States have sovereign rights to manage the tuna resources in their EEZs.²¹⁷ For this reason, RFMOs cannot restrict the freedom of coastal States' sovereign rights over the living resources within their EEZ. To do so

²¹³ The *FAO Code of Conduct for Responsible Fisheries* reiterates the requirement for compatible conservation and management measures in Articles 6.12, 7.3.1 and 7.3.2.

²¹⁴ Evelyne Meltzer, *Global overview of straddling and highly migratory fish stocks*, Conference on the Governance of High Seas Fisheries and the United Nations Fish Agreement: Moving from Words to Action, St. John's Newfoundland and Labrador May 1-5, 2005. <http://www.dfo-mpo.gc.ca> (accessed 22 November 2009); See also UN General Assembly Resolution 44/225 regarding Large-scale pelagic driftnet fishing and its impact on living marine resources of the world's oceans and seas. <http://www.un.org/> (accessed 18 November 2009).

²¹⁵ Emily Gardner, 'Fishing Nations Reach Agreement on Management of Straddling Fish Stocks and Highly Migratory Fish Stocks' in Jose A. de Yturriaga's *The International Regime of Fisheries: From UNCLOS 1982 to the Presential Sea*, (Martinus Nijhoff, 1997) 205.

²¹⁶ Richard S Shomura, Jacek Majkowski, Robert F Herman, *Status of Interactions of Pacific Tuna Fisheries in 1995*, Proceedings of the Second FAO Expert Consultation on Interactions of Pacific Tuna Fisheries Shimizu, Japan 23-31 January 1995.

²¹⁷ *LOSC*, Art. 56.

would be tantamount to infringement on the sovereign right of the coastal State by the RFMO. Yet, the UN Fish Stocks Agreement does not provide any guidelines regarding how compatible measures between maritime zones are to be achieved. It would be assumed that, since the UN Fish Stocks Agreement also recognises and acknowledges the sovereign rights of coastal States in their EEZs,²¹⁸ the coastal State ought to adopt conservation and management measures whose effect must be matched by the measures established for the high seas. Burke maintains that the coastal States' conservation and management regimes in areas under national jurisdiction take precedence over that established in the high seas.²¹⁹

Pursuant to Article 7(2)(a) of the UN Fish Stocks Agreement the conservation and management measures adopted by the coastal State within areas under national jurisdiction take precedence and the measures established for the high seas for the same stocks should not undermine the effectiveness of the coastal State measures. If this be the case, then high seas measures must meet the standard set by the coastal State measures,²²⁰ if compatibility of these measures is to be achieved. The assumption would be that, the standard of coastal State measures is effective in achieving the long term sustainability of the tuna stocks in the region. However, if the coastal State standards are less effective or non-existent, it is argued that "the most effective approach to designing compatible conservation measures is to proceed on a regional basis, treating the relevant ocean space as an integrated whole and adopting measures that apply to the relevant ocean space as an integrated whole and adopting measures that apply to stocks throughout their range."²²¹ Even so, a challenge arises of how to assess the compatibility of EEZ and high seas measures.²²²

²¹⁸ *UN Fish Stocks Agreement*, Art. 7(1).

²¹⁹ W T Burke, 'Highly Migratory Species in the New Law of the Sea' in André Tahindro, 'Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks' (1997) 28 *Ocean Development and International Law* 1, 16.

²²⁰ Jaye Ellis, 'The Straddling Stocks Agreement and the Precautionary Principle as Interpretive Device and Rule of Law' (2001) 32(4), *Ocean Development & international Law* 289, 300. For example if the coastal State declares a moratorium or similar measures to allow a depleted stock to recover, then measures adopted for the high seas will have to follow suit. But this raises the question of whether the coastal State measures are up to a standard that would ensure sustainability of the tuna stocks in question and how compatibility is to be assessed. It is not in the scope of this thesis to expound on this issue.

²²¹ Jaye Ellis, 'The Straddling Stocks Agreement and the Precautionary Principle as Interpretive Device and Rule of Law' (2001) 32(4) *Ocean Development & international Law* 289, 302.

²²² For further reading see, W T Burke, 'Compatibility and Precaution in the 1995 Straddling Stock Agreement' in Harry N. Scheiber (ed), *Law of the Sea: The Common Heritage and Emerging Challenges*

In the absence of the relevant guidelines, RFMOs sometimes become primarily responsible for the establishment of compatible measures in areas under the jurisdiction of States and on the high seas. In such a case, the coastal State adapts to the practices of the RFMO.²²³ The lack of clarity in the law may be the reason most RFMOs have not necessarily formulated specific measures in accordance with the requirements of the UN Fish Stocks Agreement with respect to compatibility. It is notable, however, that the issue of compatibility was considered one of the most difficult at the UN Conference on Straddling and Highly Migratory Fish stocks, especially because it touched on the freedom of fishing and sovereign rights of coastal States.²²⁴

While the concept of compatibility of measures has not yet been widely implemented, some RFMOs have acknowledged its importance in their Convention text. The Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean²²⁵ has incorporated the provisions from Article 7 of the UN Fish Stocks Agreement in respect to compatibility. Being the newest tuna RFMO, the WCPFC which was established by the WCPF Convention has adopted several measures which incorporate the provisions of the UN Fish Stocks Agreement. Accordingly, the provisions of the WCPF Convention mirror those of

(Brill Academic Publisher, 2000) 105; Rainer Lagoni, 'Principles Applicable to Living Resources Occurring both within and without the Exclusive Economic Zone or in Zones Overlapping Claims' in *Report of the Sixty-Fifth Conference, London, The International Law Association* (1993); Shigeru Oda, *International Control of Sea Resources* (Martinus Nijhoff Publishers, 1989) xxi-xxii.

²²³ Orebech *et al* have referred to this approach of achieving compatible conservation and management measures as the top-down approach. The alternative to this approach is the bottom-up approach where the coastal State establishes the conservation and management measures for tuna stocks within its EEZ which should be replicated on the high seas. See Peter Orebech, Ketill Sigurjonsson and Ted L. McDorman, 'The 1995 United Nations Straddling and Highly Migratory Fish Stocks agreement: Management, Enforcement and dispute Settlement' (1998) 13(2), *The International Journal of Marine and Coastal Law* 119, 128.

²²⁴ Tore Henriksen, Geir Honneland and Are Sydnæs, *Law and Politics in Ocean Governance: The UN Fish Stocks Agreement and Regional Management Regimes* (Martinus Nijhoff Publishers, 2006) 31. Many fishing States argued that the conservation and management measures for straddling and highly migratory fish stocks should be based in the biological unit over its entire range of distribution but not divided along political boundaries. Coastal States on the other hand considered this position as compromising their sovereignty over the living resources within the EEZ as provided for under the LOSC. See, Evelyn Meltzer, 'Global Overview of Straddling and Highly Migratory Fish Stocks: The Unsustainable Nature of High Seas Fisheries' (1994) 25(3) *Ocean Development & International Law* 255, 326; Charlotte de Fontaubert, 'Legal and Political Consideration' in WWF/IUCN, *The Status of Natural Resources on the High Seas* (WWF/IUCN, 2001) 81.

²²⁵ *Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean* (entered into force on 19 June 2004). Hereinafter referred to as WCPF Convention.

Article 7(2) of the UN Fish Stocks Agreement.²²⁶ The WCPF Convention has also incorporated the provisions of Article 7(2)(a)-(f) with respect to the issues to be taken into account by members when establishing compatible conservation and management measures for tuna stocks in the Convention Area.²²⁷

Additionally, the WCPF Convention requires the coastal State to ensure that the measures adopted and applied by it to tuna stocks within areas under its national jurisdiction do not undermine the effectiveness of measures adopted by the WCPFC in respect to the same stocks.²²⁸ Other RFMOs like ICCAT simply provide recommendations that do not necessarily reflect the compatibility requirement of the UN Fish Stocks Agreement but which may lead to the compatibility of measures in areas under the jurisdiction of States and those of the high seas.²²⁹

Notably, the UN Fish Stocks Agreement recognises that jurisdictional boundaries are biologically insignificant since tuna stocks migrate freely across EEZs and the high seas. Hence the requirement obligating States to take into account the biology of stocks and the relationships between the distribution, fisheries and geographical particularities of the region.²³⁰ The biological unity of tuna stocks and their distribution are significant in establishing the extent of the stock in order to manage it in its entirety. As established in section 2.2, the biological characteristics of tunas determine their migration, seasonality and consequently their distribution. These aspects are vitally important in regulating tuna catch levels. The following section focuses on the measures that States are required to implement for the conservation and management of tuna fisheries subject to the obligation to cooperate in accordance with the LOSC and the UN Fish Stocks Agreement.

²²⁶ *WCPF Convention*, Art. 8(1).

²²⁷ *WCPF Convention*, Art. 8(2).

²²⁸ *WCPF Convention*, Art. 8(3).

²²⁹ ICCAT Convention, Art. VI. All RFMOs have conducted an independent performance review to evaluate their effectiveness in response to calls from the international community, with a view to strengthening governance of RFMOs. The criteria employed in these reviews were developed at the first Joint meeting of Tuna RFMOs in Kobe, Japan –January 22-26, 2007. A second joint meeting of RFMOs has since taken place in St. Sebastian, Spain- June 29-July 3, 2009. These meetings have been instrumental as most RFMOs have taken action by responding to the concerns of the international community. One such concern is the need to incorporate the provisions of international legal instruments relevant to the management of tuna in their Conventions or Agreements.

²³⁰ *UN Fish Stocks Agreement*, Art. 7 (2)(d).

2.5.3 Implementation of Tuna Conservation and Management Measures

Having discussed the provisions contained in the LOSC and the UN Fish Stocks Agreement as they relate to the duty to cooperate for the conservation and management of tuna, this section will focus more sharply on those provisions that specifically draw attention to the elements of such cooperation. These include the determination of total allowable catch; data submission and sharing; and compliance and enforcement.

2.5.3.1 Determination of the Total Allowable Catch (TAC)

Article 61(1) of the LOSC provides that the coastal State “shall determine the allowable catch” of living resources within its EEZ. The word “shall” as it appears in this Article means that the duty to make such a determination is compulsory. The quantum of the TAC is however discretionary as stipulated in Article 297(3)(a) of the LOSC. Article 297(3)(b) of the LOSC makes provision for mediation proceedings when a coastal state “arbitrarily” refuses to determine its allowable catch. Thus, it is conceivable that Article 61(1) of the LOSC is “only discretionary as to the result achieved though mandatory as to the fact of its exercise”.²³¹

The TAC is defined as “the total allowable catch to be taken from a resource in a specified period (usually a year), as defined in the management plan”.²³² It may be allocated to the States concerned in the form of quotas, as specific quantities or proportions.²³³ The TAC is employed as a means of limiting the commercial exploitation of fish stocks. In this regard, its purpose is to ensure that no more fish are caught from a stock than is biologically justifiable.²³⁴

Although the TAC has become one of the main tools of present-day fisheries management,²³⁵ it is a complex process involving different agents and institutions.²³⁶ The setting of the TAC has to counterbalance other fisheries management objectives

²³¹ Syma A Ebbin, Alf Hakon Hoel and Are K. Sydnes, *A Sea Change: The Exclusive Economic Zone and Governance Institutions* (Springer Publications, 2005) 18.

²³² FAO Fisheries Glossary <http://www.fao.org/fi/glossary/> (accessed 17 June 2010).

²³³ FAO Fisheries Glossary <http://www.fao.org/fi/glossary/> (accessed 17 June 2010).

²³⁴ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 283.

²³⁵ Ikerne del Valle and Kepa Astorkiza, ‘Institutional Designs to Face the Dark Side of Total Allowable Catches’ (2007) 64, *ICES Journal of Marine Science* 851, 851.

²³⁶ Astorkiza et al, ‘Participation’ in Lorenzo Motos and Douglas Clyde Wilson (eds), *The Knowledge Base of Fisheries Management* (Elsevier, 2006) 239.

including economic social and political objectives.²³⁷ Not only does the implementation of the TAC require the availability of adequate and reliable data, which is often costly and difficult to obtain, but also skilled personnel are required to analyse such data.²³⁸ The implication is that the TAC should be based on the status of tuna stocks. However, in practice fishing precedes determination of the TAC. In which case, the abundance of the fish stocks is not accurately determined. The exploitation of such stocks may be detrimental in the event that the stock in question is already overexploited. In reality, an assessment of fish stocks ought to be carried out before States commence fishing activities, to determine the initial biomass, if coastal States are to fulfil their obligation under Article 61(1) of the LOSC. Most States, particularly developing coastal States are not able to determine the TAC for lack of financial and technical resources.²³⁹ Even for developed States, catch quota regulations are expensive,²⁴⁰ and difficult to administer.²⁴¹

According to the LOSC, negotiation and cooperation to determine the level of TAC for tuna stocks is to be achieved via bilateral agreements or through RFMOs.²⁴² However, no further guidance is provided, except that the best scientific evidence available to the coastal State should be taken into account, and that the coastal State shall ensure through proper conservation and management measures that the maintenance of the living resources in the EEZ is not endangered by over-exploitation.²⁴³ In addition, the management measures adopted by the coastal State are

²³⁷ Martin Aranda, Arantza Murillas and Lorenzo Motos, 'Command-and-Control Quota-Based Regimes' in Lorenzo Motos and Douglas Clyde Wilson (eds), *The Knowledge Base of Fisheries Management* (Elsevier, 2006) 145; Per Sandberg, Bjarte Bogstard and Ingolf Rottingen, 'Bioeconomic Advice on TAC – The States of the Art in the Norwegian Fishery Management' (1998) 37, *Fisheries Research* 259, 261.

²³⁸ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 283; Orrego Vicuna, *The Changing International Law of High seas Fisheries* (Cambridge University Press, 1999) 73; M. Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 51.

²³⁹ Burke contends that 'the data requirements are difficult to meet, particularly for developing States, because the scientific basis for data collection and analysis is frequently inadequate.....regulation of fishing by this method is difficult and often impossible'. See Donna R Christie, 'The Conservation and Management of Stocks Located Solely within the Exclusive Economic Zone' in Ellen Hey (ed), *Developments in International Fisheries Law* (Kluwer Law International, 1999) 399.

²⁴⁰ Donna R Christie, 'It Don't Come EEZ: The Failure and Future of Coastal States Fisheries management' (2004) 14(1) *Journal of Transnational Law and Policy* 1, 8.

²⁴¹ Donna R Christie, 'The Conservation and Management of Stocks Located Solely within the Exclusive Economic Zone', in Ellen Hey (ed), *Developments in International Fisheries Law* (Kluwer Law International, 1999) 399.

²⁴² LOSC, Arts. 63 and 64.

²⁴³ LOSC, Art. 61(2). Scheiber notes that this is a goal that coastal States have not accomplished successfully since "every coastal State with major fishing interests has failed to sustain the level of stocks

to “be designed to maintain or restore populations of harvested species at levels which can produce the maximum sustainable yield” (MSY).²⁴⁴ Taken as a whole, the tone of Article 61 of the LOSC strongly suggests that the coastal State may have a broad discretionary power in determining the TAC.

2.5.3.1.1 Maximum Sustainable Yield

MSY is defined as ‘the highest theoretical equilibrium yield that can be continuously taken (on average) from a stock under existing environmental conditions without affecting significantly the reproduction process’.²⁴⁵ If the MSY is exceeded, the biomass of the tuna stock cannot regenerate to previous levels and a lower yield is therefore obtained.²⁴⁶ It is possible that such stocks could collapse if the MSY is exceeded significantly.²⁴⁷

Although the MSY concept has been used in fisheries management since the 1950s,²⁴⁸ several criticisms have been levelled against it. As a biological concept, the MSY is flawed.²⁴⁹ MSY as a benchmark used in fisheries management to establish the TAC is considered flawed because it only addresses the effects of fishing on the target stock, but neglects the effects of fishing on associated stocks or on its wider impact on the marine ecosystem.²⁵⁰ Consequently, it becomes impossible to determine a constant value of MSY from a stock.²⁵¹

in its fisheries” since the adoption EEZs. See Harry N Scheiber, ‘Ocean Governance and the Marine Fisheries Crisis: Two Decades of Innovation-and Frustration’ (2001) 20 *Virginia Environmental Law Journal* 119, 127.

²⁴⁴ LOSC, Art. 61(3); *UN Fish Stocks Agreement*, Art. 5(b).

²⁴⁵ FAO, *Fisheries Glossary*, <http://www.fao.org/fi/glossary/> (accessed 20 June 2010).

²⁴⁶ Stuart M Kaye, *International Fisheries Management* (Kluwer Law International, 2001) 51.

²⁴⁷ Ibid.

²⁴⁸ André E Punt and Anthony D M Smith, ‘The Gospel of Maximum Sustainable Yield in Fisheries Management: Birth, Crucifixion and Reincarnation’ in Reynolds et al (eds), *Conservation of exploited species* (Cambridge University Press, 2001) 60.

²⁴⁹ David Attard, *The Exclusive Economic Zone in International Law* (Oxford University Press, 1987) 153; Barbara Kwiatkowska, *The 200 Mile Exclusive Economic Zone in the New Law of the Sea* (Martinus Nihoff Publishers, 1989) 49.

²⁵⁰ Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 6. The social aspects of fisheries management are also not incorporated within the MSY concept.

²⁵¹ André Tahindro, ‘Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks’ (1997) 28 *Ocean Development and International Law* 1, 6.

In the case of tuna stocks, the MSY would need to address a specific objective such that if for example, the stocks need rebuilding, the reference points should lead to such an objective.²⁵² Hence the proposal of the third session of UN Fish Stocks Conference for MSY to be adopted as a “limit reference point” as opposed to being a “target reference point”.²⁵³ Economists also argue that the failure of the MSY concept to include the economic objectives of fisheries leads to overfishing and overcapitalisation.²⁵⁴ Consequently, tuna stocks management based on MSY could result in overexploitation.²⁵⁵

2.5.3.1.2 Constraints to Determination of the TAC

Regarding TAC levels for tuna stocks, the negotiations between coastal States and fishing States are instrumental in determining the overall TAC, allocating the TAC between the States and formulating the relevant management scheme which would accommodate further adjustments of the TAC as deemed necessary. While this may appear to be a relatively simple exercise, it is difficult to achieve when dealing with tuna fisheries which involve varied participating states using various gears types and fishing techniques and targeting different species.²⁵⁶ In addition, the tuna on the high seas are

²⁵² Ibid.

²⁵³ Ibid. “Limit Reference Point” indicates the limit beyond which the state of a fishery is not considered desirable and fishery development should stop before reaching it. “Target Reference Point” corresponds to a state of a fishery which is considered desirable and management action should aim at bringing and maintaining the fishery at this level. See FAO Fisheries Glossary <http://www.fao.org/fi/glossary/> (accessed 19 June 2010).

²⁵⁴ John J Rooney, ‘Impact of the Magnuson Fisheries Conservation and Management Act on Fisheries in the U.S. Exclusive Economic Zone’, in Donna R Christie, ‘It Don’t Come EEZ: The Failure and Future of Coastal States Fisheries Management’ (2004) 14(1), *Journal of Transnational Law and Policy* 1; Yoshifumi Tanaka, *A Dual Approach to Ocean Governance: The Case of Zonal and Integrated Management in International Law of the Sea* (Ashgate Publishing, 2008) 55.

²⁵⁵ Gail Lutgen and Andrew Neil, ‘Maximum Sustainable Yield of the Marine Capture Fisheries in Developing Archipelagic States- Balancing Law, Science, Politics and Practice’ (2008) 23(1) *The international Journal of Marine and Coastal Law* 1-37. Although in many respects the inadequacies of TACs have similar origins and correspond to those of MSY, where TACs have replaced the role of MSY, the situation is much improved. See G L Kesteven, ‘MSY Revisited: A Realistic Approach to Fisheries Management and Administration’ (1977) 21(1) *Marine Policy* 73, 73.

²⁵⁶ The participating States are at different economic levels (developed and developing States), some are coastal others DWFNs. Also Different fishing techniques are used which can impact the extent of exploitation. The tuna species targeted may be overexploited or underexploited, juveniles or adults. For example, Australia targets juvenile southern bluefin tuna. See A Willock and I Cartwright, *Conservation Implications of Allocation under the Western and Central Pacific Fisheries Commission* (WWF Australia and TRAFFIC Oceania, 2006) 12.

traditionally regarded as consisting of “an open-access resource, belonging to whomever catches them”.²⁵⁷

As the diverse interests of States participating in tuna fisheries, different species and gears create difficulties in the determination of the TAC, a number of variables need to be taken into account when determining the TAC for tuna fisheries, in order to ensure the stability of long-term agreements between States. First, as coastal States and DWFNs may have different national interests, they may be at variance on the level of TAC and its allocation among members of an RFMO. In the interest of the long-term sustainability of such stocks, these competing interests need to be reconciled. States cooperating pursuant to Articles 63 and 64 of the LOSC are challenged with the complex issues of regulating and allocating the TAC for multinational tuna stocks as the LOSC neither provides for joint determination of the TAC by all States concerned, nor the basis of national allocation. Such a situation begs the question of how the TAC for tuna should be determined and therefore allocated among the relevant States.²⁵⁸ In order to improve the chances of achieving cooperation among States, it is essential that they perceive fairness and equity in the allocation of the TAC.²⁵⁹

A further difficulty arises due to the large number of participants to an agreement, uncertainty over the participation of new entrants and the possibility of ‘free riding’ by non-participants to an agreement.²⁶⁰ Third, the integrity of TAC allocations needs to be supported by effective enforcement to ensure compliance with the allocation and other conservation and management measures.²⁶¹

²⁵⁷ William H Bayliff, Juan Ignacio de Leiva Moreno and Jacek Majkowski, *Management of Tuna Fishing Capacity: Conservation and Socio-economics*, Second Meeting of the Technical Advisory Committee of the FAO Project 15-18 March 2004, Madrid, Spain (FAO, 2005) 308.

²⁵⁸ Should the allocation be based on ‘the proportion of time spent by the stocks in the EEZ of each State’?; or ‘reference to the pattern of historical fishing defined in terms of previous levels?’; or proportions of catches by the States concerned’?. See M Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (1987) 114.

²⁵⁹ Anthony Cox, *Quota Allocation in International Fisheries*, OECD Food, Agriculture and Fisheries Working Papers No. 22 (OECD, 2009) 13. If any participant in the agreement perceives that it has not received an equitable share of the possible returns from the agreement to make it optimal, they may defect and break the cooperative agreement.

²⁶⁰ Ibid 14.

²⁶¹ Ibid 13.

2.5.3.1.3 TAC Allocations

The issue of allocation is fundamental to the long-term sustainability of tuna stocks.²⁶² As tuna stocks on the high seas are not owned by any State, RFMOs allocate fishing opportunities between their members as a means of regulating the exploitation of such stocks. Allocations are made in terms of tonnes or number of vessels and these are mostly based on historical information of the fishery, such as harvest levels and stock sizes.²⁶³ Another criterion is the zonal attachment (geographical distribution of tuna stocks).²⁶⁴ Allocations therefore relate to which States have been fishing and the area in which they have been fishing. When these opportunities are allocated in form of individual quotas to States for example, the sum total should not exceed the internationally agreed national allocation.²⁶⁵

Basing the allocation of fishing opportunities on historical catches can be problematic in that, some States may be interested in entering a fishery but have no history of having been fishing in a particular region. Such a State would be excluded in the allocation process. Although it remains the main criteria for allocation, this method may be considered discriminatory.²⁶⁶ Chand *et al* propose that a more accurate method

²⁶² Studies of cooperative fisheries management have indicated that the conservation objectives of fisheries have been difficult to accomplish without the issues of allocation being resolved in the first instance. See Grafton *et al*, *Incentive Based Approaches to Sustainable Fisheries*, Australian National University, Economics and Environment Network working Paper EEN0508 (ANU, 2005) 12.

²⁶³ Martin Aranda, Arantza Murillas and Lorenzo Motos, 'Command-and-Control Quota-Based Regimes' in Lorenzo Motos and Douglas Clyde Wilson (eds), *The Knowledge Base of Fisheries Management* (Elsevier, 2006) 146. The IATTC bases allocation on participation. The WCPFC Convention is an exceptional case as it lists in Article 10(3), factors to be taken into account in developing criteria for allocation. Historical catch is considerably easy to quantify. See Anthony Cox, *Quota Allocation in international Fisheries*, OECD Food, Agriculture and Fisheries Working Papers No. 22 (OECD Publishing, 2009) 16.

²⁶⁴ Alf Hakon Hoel and Ingrid Kvalik, 'The Allocation of Scarce Natural Resources: The Case of Fisheries' (2006) 30 *Marine Policy* 347, 351. Zonal attachment is considered critical in the determination of the EEZ segment of tuna stocks, while historical catch is critical for the determination of quotas for the high seas segment.

²⁶⁵ Rosemary Rayfuse, *Regional Allocations or Zen and the Art of Pie Cutting*, A paper prepared for the Sharing the Fish Conference 06: Allocation Issues in Fisheries Management, Perth, 26 February-2 March 2006.

²⁶⁶ In the western and central Pacific Ocean, the historical approach of setting access conditions employed by the Pacific Island Countries is considered non-transparent and non-participatory and therefore contributing to the poor performance of tuna fisheries. See Hannah Parris and R Quentin Grafton, 'Can Tuna Promote Sustainable Development in the Pacific?' (2006) 15 *Journal of Environment and Development* 269, 282.

of allocation would be for States to apportion allocation of harvesting rights as a percentage of a total allowable catch.²⁶⁷

Some RFMOs have developed criteria for catch allocation through negotiation with contracting parties, as a means of incorporating the individual national interests of States. The effectiveness of such allocations is contingent upon obtaining consensus between States.²⁶⁸ For instance, ICCAT has developed comprehensive criteria for allocation of fishing possibilities for the tuna stocks under its purview. The criteria relate to past and present fishing activity of qualifying participants; the status of stock(s) to be allocated and the fisheries; status of the qualifying participants; and compliance, data submission and scientific research by qualifying participants.²⁶⁹ Regarding the status of qualifying participants, the criteria under this category consider, *inter alia*, the dependence on the stocks of the coastal States, the economic and social importance of the fishery for such participants, and their right to engage in fishing on the high seas for the stocks to be allocated.²⁷⁰ Unlike the detailed measures adopted by WCPFC on allocations, the ICCAT criteria are non-binding and may therefore not be strictly applied.

With respect to allocation, a challenge for RFMOs is to provide mechanisms for allocation that balance conservation interests with the economic and social interest of States.²⁷¹ This situation is further complicated by new entrants to tuna fisheries under the purview of an RFMO, as States exercise their right to fish on the high seas. The allocation of participatory rights to new entrants and fishing entities in RFMOs is fundamental to the effective management of tuna fisheries.²⁷² This is because new

²⁶⁷ Satish Chand, R Quentin Grafton, and Elizabeth Petersen, 'Multilateral Governance of Fisheries: Management and Cooperation in the Western and Central Pacific Tuna Fisheries' (2003) 18 *Marine Resource Economics* 329, 340.

²⁶⁸ Ted L McDorman, 'Implementing Existing Tools: Turning Words into Actions- Decision-making Processes of Regional Fisheries Management Organisations (RFMOs)' (2005) 20(3-4) *International Journal of Marine and Coastal Law* 423, 440.

²⁶⁹ ICCAT, *The ICCAT Criteria for the Allocation of Fishing Possibilities (Ref. 01-25)*; Robin Allen, James A Joseph and Dale Squires, *Conservation and Management of Transnational Tuna Fisheries*, (Wiley Blackwell, 2010) 157.

²⁷⁰ ICCAT, *The ICCAT Criteria for the allocation of fishing possibilities (Ref. 01-25)*.

²⁷¹ Michael W Lodge and Satya N Nandan, 'Some Suggestions Towards Better Implementation of the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks' (2005) 20(3-4) *The International Journal of Marine and Coastal Law* 345, 374.

²⁷² It is important that the RFMO and new entrant mutually arrive at acceptable terms of entry, which should clearly state the membership rights and obligations of the State requesting for admission in a

entrants anticipate a share of the allocation. The participation of new entrants may affect the allocation in two ways. First, it may require that the allocation be further subdivided, thus reducing the shares of existing members.²⁷³ Second, the TAC may need to be increased, thus exerting pressure on tuna resources,²⁷⁴ thereby threatening their sustainability.

2.5.3.1.4 Participation of New Entrants

Pursuant to Article 8(3) of the UN Fish Stocks Agreement, RFMOs are required to admit “States having a real interest” in a particular fishery.²⁷⁵ Further, the UN Fish Stocks Agreement requires States to “agree, as appropriate, on participatory rights such as allocations of allowable catch or levels of fishing effort”.²⁷⁶ Although the term ‘real interest’ is not further defined, it could be taken generally to mean any States that are interested in entering the fishery- ‘new entrants’. In which case, RFMOs are obligated to admit new members. However, their admission is contingent upon the new entrants being willing to abide by the conservation and management measures adopted by the RFMO. The UN Fish Stocks Agreement obligates States cooperating through RFMOs to agree on means by which the fishing interests of new members or participants will be accommodated,²⁷⁷ and enumerates the criteria for their admission.²⁷⁸ The consideration of the “status of the tuna stocks” and the “existing fishing efforts” in the allocation of TAC to new members suggests that RFMOs ought to be cautious to make allocations only for stocks that are not yet overexploited.

timely manner. See, Kim Hang Pham Do, Henk folmer and Henk Norde, *Fishery Management Games: How to Reduce Effort and Admit of New Members*. <http://www.nzares.org.nz> (accessed 27 June 2010).

²⁷³ André Tahindro, ‘Conservation and Management of Transboundary Fish Stocks: Comments in Light of the Adoption of the 1995 Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks’ (1997) 28 *Ocean Development and International Law* 1, 24.

²⁷⁴ A Willock and I Cartwright, *Conservation Implications of Allocation under the Western and Central Pacific Fisheries Commission* (WWF Australia and TRAFFIC Oceania, 2006) 10. Increasing the TAC would put additional pressure upon the tuna stocks as in the case of ICCAT.

²⁷⁵ *UN Fish Stocks Agreement*, Art. 8(3).

²⁷⁶ *UN Fish Stocks Agreement*, Art. 10 (b).

²⁷⁷ *UN Fish Stocks Agreement* Art. 10(i).

²⁷⁸ *UN Fish Stocks Agreement* Art. 11. The criteria include; Status of tuna stocks and the existing level of fishing effort; the interests, fishing patterns and fishing practices of new and existing members or participants; contributions of new and existing members to conservation and management of the stocks; needs of coastal fishing communities dependent mainly on fishing for the tuna stocks; the needs of coastal States whose economies are overwhelmingly dependent on the exploitation of the stocks and the interests of developing States from the subregion or region in whose areas of national jurisdiction the stocks also occur.

Decreasing fishing opportunities can make allocation difficult.²⁷⁹ Some States which are members of RFMOs may resist the new members for fear of losing a share in fisheries which are already fully exploited or over-exploited thereby encouraging the possibility of non-members with an interest in the fishery to engage in unauthorised fishing activities.²⁸⁰ Additionally, members may be reluctant to share the returns of their investment in the fishery with new-comers. A new comer admitted into such a fishery will be considered to be a “free rider” whose participation could result in non-cooperation by the existing members.²⁸¹ In situations where tuna stocks are oversubscribed and fully allocated among members of an RFMO, cooperation within the framework of the RFMO may then result in the adoption of new allocation criteria.²⁸² Nonetheless, it is suggested that, according to Article 8(3) and (4) of the UN Fish Stocks Agreement, new entrants must be offered a ‘just and reasonable’ share of the TAC under an [RFMO] management plan.²⁸³

The approaches adopted by RFMOs in determining the participatory rights of new entrants are diverse. IATTC has established a purse seine fleet capacity limit. The Commission limits fishing in IATTC’s Convention area to the purse seine register, thus requiring that new entrants to IATTC access the purse seines by replacing vessels on the register with a vessel(s) of similar capacity.²⁸⁴ These conditions appear restrictive to the admission of new entrants and reflect the unwillingness of such RFMOs to share fishing

²⁷⁹ Erik Jaap Molenaar, ‘Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Organisations’ (2003) 18 *The International Journal of Marine and Coastal Law* 457, 459.

²⁸⁰ Camille Goodman, ‘The Regime for Flag State Responsibility in International Fisheries Law- Effective Fact, Creative Fiction, or Further Work Required?’ (2009) 23 *Australian Maritime Law Journal* 157, 65. Such States may proceed to fish illegally if not granted admission.

²⁸¹ Gordon R Munro, ‘Implementation of the Provisions of the UN Fish Stocks Agreement: Conditions for Success- The Case of Developing Fishing Nations’ in IDDRA, *Policy Research: Options for Strengthening National, Sub-regional and Regional Institutions and Policies to better Address Developing Countries’ Needs* (DFID, 2003) 30. <http://www.iddra.org/publications.htm> (accessed 30 June 2010).

²⁸² These criteria may result in timely and effective adoption of conservation and management measures as well as allocations. See, Judith Swansea, *Decision-making in Regional Fishery Bodies or Arrangements: The Revolving Role of RFBs and International Agreement on Decision-making Process*, FAO Fisheries Circular No. 995, Rome (FAO, 2004).

²⁸³ Peter Orebech, Ketill Sigurjonsson and Ted L McDorman, ‘The 1995 United Nations Straddling and Highly Migratory Fish Stocks Agreement: Management, Enforcement and Dispute Settlement’ (1998) 13(2) *The International Journal of Marine and Coastal Law*, 119, 126.

²⁸⁴ IATTC, *Resolution On the Capacity of the Tuna Fleet Operating in the Eastern Pacific Ocean*, Para 7, <http://www.iattc.org> (accessed 29 June 2010).

opportunities with them.²⁸⁵ This is more the case especially for developing States which will continually be left to settle for the leftovers.²⁸⁶ A different approach is taken by ICCAT whose allocation criteria discussed earlier is modelled upon the provisions of Article 11 of the UN Fish Stocks Agreement, and provides an open invitation for new entrants. Similarly, CCSBT has admitted members without reductions in the quota allocated to existing members.²⁸⁷

2.5.3.1.5 Participation of Non-Members

Non-members of RFMOs may engage in illegal fishing activities by registering their vessels in States that are not members of an RFMO. The ‘free riding’ behaviour of non-members is difficult for RFMOs to control (especially since RFMOs can only enforce their measures on members), and undermines the effectiveness of the conservation and management measures adopted by RFMOs. However, by being non-members of an RFMO, States are not exonerated from the obligation to cooperate in the application of conservation and management measures established by the RFMO.²⁸⁸ In this regard the UN Fish Stocks Agreement requires that such States give effect to their duty to cooperate by agreeing to apply the conservation and management measures established by RFMOs.²⁸⁹ Further, members of RFMOs are required to exchange information concerning the fishing activities of non-members’ vessels engaged in fisheries for tuna, and to take measures consistent with the UN Fish Stocks Agreement and international law to deter the activities of such vessels which undermine the effectiveness of the conservation and management measures of RFMOs.²⁹⁰

The UN Fish Stocks Agreement requires members of RFMOs to encourage non-members to implement the conservation and management measures it has established and to give them benefits commensurate with their commitment.²⁹¹ In practice RFMOs

²⁸⁵ Erik Jaap Molenaar, ‘Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Organisations’ (2003) 18 *The International Journal of Marine and Coastal Law* 457, 469.

²⁸⁶ Rosemary Rayfuse, ‘The Challenge of Sustainable Fisheries’ in Nico Schrijver and Friedl Weiss (eds), *International Law and Sustainable Development, Principles and Practice* (Brill, 2004) 487.

²⁸⁷ CCSBT admitted Korea and Chinese Taipei in 2002 and 2001, respectively. See Anthony Cox, *Quota Allocation in international Fisheries*, OECD Food, Agriculture and Fisheries Working Papers No. 22 (OECD Publishing, 2009) 19.

²⁸⁸ *UN Fish Stocks Agreement*, Art. 17 (1).

²⁸⁹ *UN Fish Stocks Agreement*, Art. 8 (3).

²⁹⁰ *UN Fish Stocks Agreement*, Art. 17(4).

²⁹¹ *UN Fish Stocks Agreement*, Art. 17(3)

have implemented this obligation by inviting non-members to participate as cooperating non-members. For example, CCSBT through its Extended Commission has established such a status to enable non-members who harvest southern bluefin tuna or through whose EEZ southern bluefin tuna migrates to cooperate with the Commission. Such States or entities may apply to the Extended Commission for membership and upon admission may negotiate catch limits.²⁹² As cooperating non-members of the Extended Commission they can participate in meetings but are not entitled to vote.²⁹³

Nonetheless, the challenge of allocation may result in the allotment of inadequate quotas for some members or cooperating non-members. In a situation where the allotment is considered inadequate by a member, that member who is dissatisfied may choose not to adhere to the quota allocations.²⁹⁴ Such members often breach their quota limits. Some RFMOs have responded to such situations through the adoption of measures to deal with recalcitrant members. Both CCSBT and ICCAT have adopted such measures.²⁹⁵

2.5.3.2 Data Contribution and Sharing

Under the LOSC, coastal States are obligated to contribute and exchange available scientific information, catch and fishing effort statistics, and other data relevant to the conservation of fish stocks.²⁹⁶ The UN Fish Stocks Agreement further elaborates on the obligations of coastal States and DWFNs with respect to tuna fisheries data and requires them to “collect and share, in a timely manner, complete and accurate data concerning fishing activities on, *inter alia*, vessel position, catch of target and non-target species and fishing effort, as set out in Annex I, as well as information from

²⁹² CCSBT, Para. 5, *Resolution to Establish the Status of Co-operating Non-Member of the Extended Commission and the Extended Scientific Committee* (adopted at the Tenth Annual Meeting – 7-10, 2003) <http://www.ccsbt.org> (accessed 29 June 2010).

²⁹³ CCSBT, Para. 5, *Resolution to Establish the Status of Co-operating Non-Member of the Extended Commission and the Extended Scientific Committee* (adopted at the Tenth Annual Meeting – 7-10, 2003) <http://www.ccsbt.org> (accessed 29 June 2010).

²⁹⁴ Such has been the experience in ICCAT where Turkey (non-cooperating member) expressed its frustration with the allocation process which it finds impossible to comply with. Some ICCAT members have also expressed concern over the economic viability of the swordfish fishery under similar circumstances. See ICCAT, *Report for Biennial Period 2002-03 Part II (2003) - Vol. I*, Madrid, Spain.

²⁹⁵ CCSBT, Art. 15(4); Rosemary Rayfuse, *Regional Allocations or Zen and the Art of Pie Cutting*, A paper prepared for the Sharing the Fish Conference 06: Allocation Issues in Fisheries Management, Perth, 26 February-2 March 2006. Taiwan has had its allocation reduced as a result of its involvement in IUU fishing.

²⁹⁶ LOSC, Arts. 61(5) and 119(2).

national and international research programmes”.²⁹⁷ Further, RFMOs are required to compile and disseminate accurate and complete statistical data, as described in Annex I, to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate.²⁹⁸

The standard requirements for the collection and sharing of data relating to tuna are provided in Annex I of the UN Fish Stocks Agreement, including the types of data States are required to collect and share through RFMOs. An obligation for flag States under the UN Fish Stocks Agreement concerning data, is to collect and exchange scientific, technical and statistical data on tuna stocks,²⁹⁹ ensuring that they are detailed, provided in a timely manner,³⁰⁰ and that the accuracy is verified.³⁰¹ As States are required to cooperate in the collection and provision of data through RFMOs, the UN Fish Stocks Agreement obligates them to agree on standards for collection, reporting, verification and exchange of fisheries data.³⁰² Additionally, States are required to agree on the specification of data and the format in which they are to be provided to [RFMOs] taking into account the nature of the stocks and the fisheries for those stocks.³⁰³ The specific types of data that States are required to share through RFMOs include catch and effort data,³⁰⁴ data on target and non-target species³⁰⁵ biological data,³⁰⁶ and vessel identification and gear related data.³⁰⁷

2.5.3.2.1 Catch and Effort Data

Data from tuna fisheries are required in decision making with respect to the management of the fishery. Data are used to evaluate the fisheries performance in relation to management objectives and to fulfil regional requirements. The extent to

²⁹⁷ *UN Fish Stocks Agreement*, Art. 5(j).

²⁹⁸ *UN Fish Stocks Agreement*, Art. 10(f).

²⁹⁹ *UN Fish Stocks Agreement*, Art. 14(1)(a).

³⁰⁰ *UN Fish Stocks Agreement*, Art. 14(1)(b); Annex I, Art. 3(1).

³⁰¹ *UN Fish Stocks Agreement*, Art. 14(1)(c).

³⁰² *UN Fish Stocks Agreement*, Art. 10(e).

³⁰³ *UN Fish Stocks Agreement*, Art. 14(2)(a); Annex I, Art. (2)(c).

³⁰⁴ *UN Fish Stocks Agreement*, Annex I, Art. 3(1)(a).

³⁰⁵ *UN Fish Stocks Agreement*, Annex I, Art. 3(1)(b).

³⁰⁶ *UN Fish Stocks Agreement*, Annex I, Art. 3(2)(b).

³⁰⁷ *UN Fish Stocks Agreement*, Annex I, Art. 4(1)(a, b, c, d).

which objectives are achieved is assessed using indicators, which are generated from data.³⁰⁸ The types of data specified under the UN Fish Stocks Agreement that States are required to share through RFMOs with respect to tuna are significant for States to meet their management objectives. Thus, they form an important aspect of the analysis in the present thesis.

First, the UN Fish Stocks Agreement stipulates the types of catch and effort data that States are required to submit to RFMOs.³⁰⁹ Catch data are the most common fishery-dependent data that are used as the basis for stock assessment in most fisheries. Catch is a function of fishing effort and abundance of the fished population. Hence, changes in the proportion of the population harvested and in abundance of the target species are reflected by the trends in catch over time.³¹⁰ Catch in numbers or weight corresponds to the removals of biomass and individuals from the ecosystem, and is the fundamental impact fishing has on fish populations.³¹¹ Fishing effort is a measure of the amount of fishing.³¹²

Catch estimates are used to calculate catch-per-unit-effort (CPUE) or catch rate, which is a simple and attractive index of abundance commonly used for stock assessment diagnosis in international fisheries.³¹³ The use of CPUE as an index of stock abundance is based on a relationship which relates catch to abundance and effort.³¹⁴

³⁰⁸ FAO, *Guidelines for the Routine Collection of Capture Fishery Data*. Prepared at the FAO/DANIDA Expert Consultation Bangkok, Thailand 18-30 May 1998, FAO Fisheries Technical Paper No. 382 (FAO, 1999) 6.

³⁰⁹ *UN Fish Stocks Agreement* Arts. 3(a-e). The specific types of catch and effort data include; a) time series of catch and effort statistics by fishery and fleet; b) total catch in number, nominal weight, or both, by species (both target and non-target); c) discard statistics, including estimates where necessary, reported as number or nominal weight by species; d) effort statistics appropriate to each fishing method; and e) fishing location, date and time fished and other statistics on fishing operations.

³¹⁰ T J Quin II and R B Deriso, 'Quantitative fish Dynamics' in Michael F O'Neill, Anthony J Courtney, Norm M Good, Clive T Turnbull, Kate M Yeomans, Jonathan Staunton-Smith and Celeste Shootingstar, *Reference Point Management and the Role of Catch-per-unit Effort in Prawn and Scallop Fisheries* (2005) 33. The State of Queensland, Department of Primary Industries and Fisheries; Fisheries Research and Development Corporation.

³¹¹ FAO, *Guidelines for the Routine Collection of Capture Fishery Data*. Prepared at the FAO/DANIDA Expert Consultation Bangkok, Thailand 18-30 May 1998, FAO Fisheries Technical Paper No. 382 (FAO, 1999) 16. Catch data is necessary for most stock assessment techniques.

³¹² OECD, *Glossary of Statistical Terms*. <http://stats.oecd.org/> (accessed 6 July 2010).

³¹³ Daniel Gaertner and Michel Dreyfus-Leon, 'Analysis of Non-linear Relationship between Catch per Unit Effort and Abundance in a Tuna Purse-Seine Fishery Simulated with Artificial Neural Networks' (2004) 61 *ICES Journal of Marine Science* 812, 812.

³¹⁴ Maunder et al, 'Interpreting Catch per Unit Effort Data to Assess the Status of Individual Stocks and Communities' (2006) 63 *ICES Journal of Marine Science* 1373, 1374.

Thus, a decline in CPUE denotes a decline in the stocks. Units of effort are dependent on the types of gear used. For example, the measures used to determine CPUE units in tuna fisheries are numbers of vessels, vessel days and in longline, number of hooks.

Catch data (target, non-target and dependent and associated species) should include reported catch, discards and non-reported catch (for example, IUU catches). The former two categories may be estimated, otherwise catches may be obtained from log books, fishery observers, shoreside or dockside monitoring. To obtain any reliable interpretation of changes in the status of stocks from catch data, a long time series of comparable catch data is required.³¹⁵ Fisheries scientists standardize CPUE for purposes of accuracy when constructing the index of abundance used in stock assessment.³¹⁶ Accurate stock assessment is vital to the provision of sound scientific advice on the management of tuna fisheries. Under the best circumstances, the level of detail in catch data will be categorised such that it provides a wide range of assessment methods that can utilise the catch data.³¹⁷

2.5.3.2.2 Practice of RFMOs Regarding Data Contribution

Through their various decision making mechanisms, RFMOs have adopted measures directed at implementing their obligations related to data submission for tuna stocks under their purview. Such measures stipulate the standard, format and types of data that States are required to submit, usually on an annual basis. For example, ICCAT stipulates the data required from contracting parties and prompts them on an annual basis to submit these data.³¹⁸ Article IX of the Convention obligates contracting parties to furnish ICCAT with any available statistical, biological and other scientific information that may be required for the Convention to achieve its objectives.³¹⁹

³¹⁵ FAO, *Guidelines for the Routine Collection of Capture Fishery Data*. Prepared at the FAO/DANIDA Expert Consultation Bangkok, Thailand 18-30 May 1998, FAO Fisheries Technical Paper No. 382 (FAO, 1999) 16.

³¹⁶ Mark N Maunder and Andre E Punt, 'Standardizing Catch and Effort Data: A Review of Recent Approaches' (2004) 70, *Fisheries Research* 141, 141; J Joseph, 'Standardizing Fishery- Dependent Catch and Effort Data in Complex Fisheries with Technology Change' (2006) 16 *Reviews in Fish Biology and Fisheries* 21, 21.

³¹⁷ FAO, *Guidelines for the Routine Collection of Capture Fishery Data*. Prepared at the FAO/DANIDA Expert Consultation Bangkok, Thailand 18-30 May 1998, FAO Fisheries Technical Paper No. 382 (FAO, 1999) 16. Such details may include size, maturity, location and date of catch.

³¹⁸ Data required includes; catch statistics, fleet statistics, catch and effort statistics, size data, catch-at-size data and tag data. See Submitting Stat Data, <http://www.iccat.int/> (accessed 4 July 2010).

³¹⁹ ICCAT, Basic Texts, Article IX(2)(a).

ICCAT's Standing Committee on Research and Statistics is mandated to develop and recommend policy procedures for the collection, compilation, analysis and dissemination of fisheries statistics regarding fishing activities in the convention area and biological information on the stocks.³²⁰ This includes the format in which data is to be submitted.³²¹

As an effort towards improving the quality of ICCAT's data on tuna stocks, the Standing Committee on Research and Statistics evaluates any omissions in data submitted by contracting parties and appraises the Secretariat on the effects of such data omissions on new stock assessments and their effect on management advice.³²² An explanation is required of the apparent omissions in data and any possible capacity challenges, and future strategies for correction of shortcomings by contracting parties.³²³ These requirements of the Standing Committee on Research and Statistics seem to be aimed at ensuring that problem solving regarding statistical data is appropriately targeted. This is because the Compliance Committee or the Permanent Working Group for the improvement of ICCAT statistics and conservation measures identifies the problematic data deficiencies and recommends appropriate actions by the respective contracting party.³²⁴

RFMOS like ICCAT and IATTC have adopted measures requiring the annual submission of catch and effort data from contracting parties. ICCAT requires data on nominal yearly catches by fishing fleet, species, year, gear, region also specifying whether from the EEZ or high seas,³²⁵ while IATTC requires data to be given by species and fishing gears and where practical via vessels log books and unloading records or in

³²⁰ ICCAT, *Recommendation by ICCAT on Compliance with Statistical Reporting Obligations* (Recommendation 05-09). <http://www.iccat.int/> (accessed 4 July 2010).

³²¹ To improve the management of their statistical document programme ICCAT has developed a standard electronic form which is to be used for the submission of all data. See ICCAT, *Recommendation by ICCAT on and electronic statistical document pilot programme* (Recommendation 06-16). <http://www.iccat.int/> (accessed 5 July 2010).

³²² ICCAT, *Recommendation by ICCAT on Compliance with Statistical Reporting Obligations* (Recommendation 05-09). <http://www.iccat.int/> (accessed 4 July 2010).

³²³ ICCAT, *Recommendation by ICCAT on Compliance with Statistical Reporting Obligations* (Recommendation 05-09). <http://www.iccat.int/> (accessed 4 July 2010).

³²⁴ ICCAT, *Recommendation by ICCAT on Compliance with Statistical Reporting Obligations* (Recommendation 05-09). <http://www.iccat.int/> (accessed 4 July 2010).

³²⁵ ICCAT, *Guidelines for Submitting Data and Information Required by ICCAT*. <http://www.iccat.int> (accessed 8 July 2010).

aggregate form.³²⁶ As required by the *UN Fish Stocks Agreement*, IATTC further stipulates the detail of aggregated data to be submitted.³²⁷ Although such scales of data are sufficient for stock assessment, data at finer scales are required for standardization of CPUE series. Such fine scales are essential for RFMOs to reduce uncertainties in their findings³²⁸ for purposes of management advice or for establishing the effect of fishing on tuna stocks.

In fulfilling the requirement for timely submission of data, RFMOs have adopted measures specifying the deadlines for data submission. IATTC for example, requires catch and effort data submitted by 30 June, while the general requirement for ICCAT is July 31. The various stocks under the purview of ICCAT have different data submission dates ranging from April to August.³²⁹ Timeliness in data submission can make a difference in the exploitation levels of tuna stocks. For instance if a stock is facing the risk of being overexploited, a possible management decision may be to require a closed season to reduce mortality. If the availability of sufficient data on such a stock is not timely for such a decision to be made, the stock may be exposed to overexploitation.

2.5.3.2.3 Biological Data

The second requirement of the *UN Fish Stocks Agreement* in regard to data is for States to share specific types of biological data through RFMOs.³³⁰ Hey affirms the importance of biological information in providing the most prominent extra-legal element that may induce States to cooperate with respect to the exploitation of fish

³²⁶ IATTC, *Resolution on Data Provision* (Resolution C-03-05). <http://www.iattc.org> (accessed 8 July 2010).

³²⁷ IATTC, *Resolution on Data Provision* (Resolution C-03-05). The minimum requirement is for catch and effort data to be aggregated by 5° x 5° by month with information on gear configuration and target species, but whenever possible, 1° x 1° by month with information on gear configuration and target species and set-by-set logbook data with information on gear configuration and target species.

³²⁸ FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 49.

³²⁹ ICCAT, *Guidelines for Submitting Data and Information Required by ICCAT*. <http://www.iccat.int> (accessed 8 July 2010).

³³⁰ *UN Fish Stocks Agreement*, Annex I, Article 3(2)(a-c) lists the types of data as; composition of catch according to length, weight and sex; other biological information supporting stock assessment, such as information on age, growth, recruitment, distribution and stock identity; and other relevant research, including surveys of abundance, biomass surveys, hydro-acoustic surveys, research and environmental factors affecting stock abundance, and oceanographic and ecological studies.

stocks like tuna.³³¹ Biological data in fisheries provide information on the productivity of a stock as well as the effects of the environment on such productivity. For example, the fecundity, spawning, growth and feeding patterns of tuna stocks provide an understanding of their seasonal availability and recruitment for purposes of management. Although an expensive exercise, tagging has been conducted by some RFMOs in the Atlantic, Indian and Pacific Oceans to obtain biological data on tuna. The information yielded from experiments with such tags includes, *inter alia*, stock structure, growth, mortality, schooling behaviour and physiology.³³² A key purpose of data from tagging programmes is to reduce uncertainty in stock assessments. An example of such a programme is the Pacific Tuna Tagging Programme which WCPFC is undertaking to improve stock assessment and management of skipjack, yellowfin and bigeye tuna in the Pacific Ocean.³³³

2.5.3.2.4 Data for Non-Target Species

Thirdly, the data required for non-target, dependent and associated species³³⁴ include small target species,³³⁵ finfish,³³⁶ sea turtles and seabirds. RFMOs like ICCAT, IATTC and WCPFC are discharging their obligations concerning such data by imposing both voluntary and mandatory measures upon their members concerning these species. ICCAT requires all members to submit annual reports of catch and effort data of sharks

³³¹ Ellen Hey, *The Regime for the Exploitation of Transboundary Marine Fisheries Resources* (Martinus Nijhoff Publishers, 1989) 16.

³³² FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (2001) 47.

³³³ Pacific Tuna Tagging Programme, *Report of Activities for 2008*. <http://www.spc.int> (accessed 9 July 2010). The Objectives of the programme are; to contribute to and reduce uncertainty in, WCPO tuna stock assessments, obtain information on rates of movement and mixing of tuna in equatorial WCPO, between this region and other regions of the Pacific basin and the impact of FADs on movement at all spatial scales, to obtain information on species specific vertical habitat utilisation by tunas and the impact of FADs on vertical behaviour, and to obtain information on local exploitation rates and productivity of tuna in various parts of the WCPO.

³³⁴ LOSC, Art. 61(4), *UN Fish Stocks Agreement* Art. 6(3d); Annex 1, Arts.1 (1), 3(1b).

³³⁵ Small species of tuna like bigeye, yellowfin, bluefin and swordfish harvested in large numbers before recruitment especially in the purse seine fishery and swordfish in longline fisheries are a concern. These catches can impact the status of stocks negatively, reduce long-term sustainable catch and increase the effort required to achieve that catch. See *Non-target Finfish Species and Small Target Species*, Kobe 2 Bycatch Workshop Background Paper. <http://www.tuna-org.org> (accessed 9 July 2010).

³³⁶ Sharks are considered one of the most threatened marine vertebrates (especially taken as bycatch) by the International Union for the Conservation of Nature. See The Pew Environmental Group, *Shark Bycatch in Tuna Fisheries*, Kobe 2 Bycatch Workshop, June 23-25, 2010, Brisbane, Australia. <http://www.pewtrusts.org> (accessed 9 July 2010). Other finfish associated with tuna fisheries are non-target billfish.

in accordance with its data reporting procedures,³³⁷ while IATTC requires its members to establish and implement a national plan of action to conserve and manage shark stocks in accordance with the *FAO International Plan of Action for the Conservation and Management of Sharks*.³³⁸ Concerning sea turtles, the measures adopted by IATTC and ICCAT are not mandatory but they encourage members to collect and provide all available information on fishery interactions with sea turtles.³³⁹ A similar requirement applies for seabirds in both RFMOs.³⁴⁰ WCPFC on the other hand requires members to implement the *International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (IPOA-Seabirds)* and to provide all available information on interactions with seabirds to enable the Commission to design mitigation measures for the incidental catch of seabirds.³⁴¹

2.5.3.2.5 Vessel-Related Data

Lastly, the UN Fish Stocks Agreement provides a detailed list of vessel-related data to be collected by States and submitted to RFMOs.³⁴² The increase in fishing mortality in tuna fisheries has been attributed to increased fleet carrying capacity and efficiency of tuna fishing vessels.³⁴³ An increase in fishing capacity may also lead to harvesting of small fish thus, making it difficult to achieve conservation and management objectives in tuna fisheries. As a result, tuna fishing fleets often move to

³³⁷ ICCAT, *Recommendation by ICCAT Concerning the Conservation of Sharks caught in Association with Fisheries Managed by ICCAT (Recommendation 2004-10)*. <http://www.iccat.int> (accessed 9 July 2010).

³³⁸ IATTC, *Resolution on the Conservation of Sharks caught in Association with Fisheries in the Eastern Pacific Ocean (Resolution C-05-03)*. <http://www.iattc.org> (accessed 9 July 2010).

³³⁹ ICCAT, *Resolution by ICCAT on Sea Turtles (Resolution 2003-11)*; IATTC, *Resolution on a Three-Year Program to Mitigate the Impact of Tuna Fishing on Sea Turtles (Recommendation C-04-07)*. <http://www.iattc.org> (accessed 9 July 2010).

³⁴⁰ IATTC, *Resolution on Incidental Mortality of Seabirds (Resolution C-05-01)*; ICCAT, *Resolution on Incidental Mortality of Seabirds (Resolution 2002-14)*.

³⁴¹ WCPFC, *Resolution on the Incidental Catch of Seabirds (Resolution 2005-01)*.

³⁴² *UN Fish Stocks Agreement*, Annex 1, Article 4(1a-d) lists data requirements for vessel identification, flag and port registry; vessel type; vessel specifications (eg. material of construction, date built, registered length, gross tonnage, power of main engines, hold capacity and catch storage methods); fishing gear description (eg. types, gear specifications and quantity). Article 4(2a-c)- The flag State will collect navigation and position fixing aids; communication equipment and international radio call sign; and crew size.

³⁴³ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) 30.

new fishing grounds in search of better catch in size and quantity.³⁴⁴ Apart from fishing effort, vessel-related data is vital for vessel identification to enable monitoring of vessels operating in the convention areas of the various RFMOs. Flag States are also required to establish a national record of fishing vessels authorised to fish on the high seas and to share the information with interested States.³⁴⁵

All RFMOs have established records of various vessels operating within their convention area. They maintain a record of fishing vessels³⁴⁶ and some, carrier vessels.³⁴⁷ Generally RFMOs maintain ‘positive lists’ of vessels authorised to fish, as well as lists of vessels presumed to have carried out IUU fishing,³⁴⁸ for purposes of compliance. These are available in public domain. Most RFMOs provide specifications for marking and identification of vessels as required by the UN Fish Stocks Agreement,³⁴⁹ and other relevant information about the vessels.³⁵⁰

³⁴⁴ Under the 1966 IATTC conservation programme for yellowfin, the carrying capacity increased from 60,000 tonnes in 1970 to 160,000 tonnes by 1976. Growth of the fleet increased demand leading to a decrease in the size of tuna harvested from 12kg in 1975 to 6kg in 1983. A lower yield in the fishery, lower annual catches and earnings led to failure of the conservation programme and migration of the fishing fleets to the Western Pacific. See James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) 31.

³⁴⁵ *UN Fish Stocks Agreement*, Art. 18(3)(c).

³⁴⁶ CCSBT, *Resolution on Amendment of the Resolution on “Illegal, Unregulated and Unreported Fishing (IUU) and Establishment of a CCSBT Record of Vessels over 24 Meters Authorised to fish for Southern Bluefin Tuna” adopted at the CCSBT15 in 2008 14-17 October 2008*; IATTC, *Resolution on a Regional Vessel Register (Resolution C-00-06)*; ICCAT, *Recommendation by ICCAT concerning the establishment of an ICCAT Record of Vessels over 24 meters Authorized to operate in the Convention Area (Recommendation 02-22)*; WCPFC, *Record of Fishing Vessels and Authorization to Fish (Conservation and Management Measure 2004-01)*. .

³⁴⁷ CCSBT, *Resolution on Establishing a Program for Transshipment by Large-Scale Fishing Vessels*.

³⁴⁸ WCPFC, *Conservation Measure to Establish a List of Vessels Presumed to have carried out Illegal, Unreported and Unregulated Fishing Activities in the Western and Central Pacific Ocean (Conservation and Management Measure 2006-09)*; ICCAT, *Recommendation Amending the Recommendation by ICCAT to Establish a List of Vessels Presumed to have carried out Illegal, Unreported and Unregulated Fishing Activities in the ICCAT convention Area*; IATTC, *Resolution to Establish a List of Vessels Presumed to have carried out Illegal, Unreported and Unregulated Fishing Activities in the Eastern Pacific Ocean*.

³⁴⁹ WCPFC, *Specifications for the Marking and Identification of Fishing Vessels (Conservation and Management Measure 2004-03)*;

³⁵⁰ Information required by RFMOs includes *inter alia*, name of vessel; registration number; previous names (if known); port of registry; photograph of vessel showing registration; previous flag (if any); international radio call sign; name and address of registered owner/s; where and when built; length, beam moulded, depth; fish hold capacity and carrying capacity; name and address of operator; type of fishing methods; gross tonnage and power of engine/s.

2.5.3.3 Compliance and Enforcement

The effectiveness of the conservation and management measures adopted by coastal States unilaterally or through the relevant RFMOs in respect of tuna resources depends on the level of compliance to these measures by fishing vessels both in the EEZ and on the high seas. The enforcement of these measures is fundamental to the long-term sustainability of tuna resources. The LOSC provides the enforcement measures applicable to the conservation and management of [tuna] fisheries in the EEZ. On the high seas, the UN Fish Stocks Agreement stipulates the enforcement measures relative to the conservation and management of [tuna] fisheries.

2.5.3.3.1 Enforcement of Fisheries Law in the EEZ

In the exercise of its sovereign rights to explore, exploit, conserve and manage the [tuna] resources in the EEZ, the coastal State may take measures necessary to ensure compliance with the laws and regulations adopted in conformity with the LOSC.³⁵¹ The LOSC in Article 73(1) provides the right for coastal States to take such measures such as boarding, inspection, arrest and judicial proceedings in exercising of its sovereign rights to conserve and manage the [tuna] resources in the EEZ. Thus, the coastal State may exercise such power against foreign fishing vessels operating in the EEZ. Vessels attempting to evade enforcement measures can be subjected to hot pursuit.³⁵²

The LOSC inserts safeguards in its provisions against undue detention,³⁵³ thus limiting the powers of coastal States to arrest and detain fishing vessels. As such, vessels and crews are to be released upon the posting of a reasonable bond or other security.³⁵⁴ The bond is thus held as surety against possible penalties. The enforcement of the prompt release obligation is facilitated by Article 292 of the LOSC which requires the question of release from detention to be resolved through a court of law or

³⁵¹ LOSC, Art.73(1).

³⁵² R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 292. Article 111 of the LOSC complements the right of the coastal State in 73(1) and allows the hot pursuit of a foreign ship by the coastal State, if such a vessel is believed to have violated the relevant laws and regulations.

³⁵³ Abdul Ghafur Hamid, 'Striking a Balance between the Rights of a Coastal State in its Exclusive Economic Zone and Freedom of Navigation of other States: A Critical Analysis' (2007) 2(1-2) *Asian Journal of International Law* 109, 144.

³⁵⁴ LOSC, Art. 73(2).

tribunal if a vessel is detained for more than 10 days, unless the parties otherwise agree.³⁵⁵

Article 73(3) of the LOSC adds that, coastal State penalties for violations of fisheries laws and regulations in the EEZ may not include imprisonment, in the absence of agreements to the contrary by the States concerned, or any other form of corporal punishment.³⁵⁶ Even so, some States' laws deviate from this requirement of the LOSC. Hence, the legislation of some thirty-two States Parties to the LOSC, provide for imprisonment even in the absence of agreements with other States.³⁵⁷ In the event of the arrest or detention of a foreign vessel, the coastal State is required to notify the flag State promptly of the action taken and of any penalties subsequently imposed.³⁵⁸

Most developing coastal States are constrained financially in the enforcement of their jurisdiction in the EEZs, thereby encouraging foreign fishers to disregard national fisheries regulations.

2.5.3.3.2 Enforcement in High Seas Fisheries

As previously discussed the migratory nature of tuna requires that they are managed in their entirety, irrespective of jurisdictional boundaries. This creates a need for enforcement measures that applicable in areas beyond the EEZ. The LOSC defines the rights and responsibilities of States on the high seas. According to Article 87 of the LOSC, all States have freedom to fish on the high seas subject to the interests of other States and the rights under the LOSC with respect to the high seas.³⁵⁹ Article 116 of the LOSC reiterates this right, making it conditional upon: a) the treaty obligations of States; b) the rights and duties of coastal States in article 63(2), and article 67; and c) the provisions of Section 2 of the LOSC. States therefore have a right to fish for tuna subject to the provisions of article 64 of the LOSC. Article 117 and 118 of the LOSC provide a duty for States to take measures to conserve [tuna] on the high seas, and an obligation for States to cooperate in the management of [tuna] on the high seas respectively.

³⁵⁵ LOSC, Art. 292.

³⁵⁶ LOSC, Art. 73(3).

³⁵⁷ R R Churchill and A V Lowe, *The Law of the sea*, (Manchester University Press, 3rd ed, 1999) 292.

³⁵⁸ LOSC, Art. 73(4).

³⁵⁹ LOSC, Art. 87.

The UN Fish Stocks Agreement fortifies the LOSC provisions relative to compliance and enforcement with an international framework for the conservation and management of straddling and highly migratory fish stocks on the high seas.³⁶⁰ As fishing vessels on the high seas are under the jurisdiction of the flag State, the UN Fish Stocks Agreement seeks to enhance flag State responsibility and enunciates the duties of the flag State with respect to controlling the fishing activities of its vessels on the high seas. This includes undertaking appropriate enforcement action.

Article 18(1) of the UN Fish Stocks Agreement obligates the flag State to take such measures as may be necessary to ensure that vessels flying its flag comply with subregional and regional conservation and management measures and that they do not engage in any activity which undermines the effectiveness of such measures.³⁶¹ Further, a State can only authorise the use of vessels flying its flag for fishing on the high seas only where it is able to exercise effectively its responsibilities in respect of such vessels.³⁶²

States Parties to the UN Fish Stocks Agreement have a duty to ensure that their vessels comply fully with the relevant requirements. Moreover, the flag State is required to implement a number of measures calculated to ensure compliance by vessels flying its flag. These measures include, *inter alia*, the control of vessels on the high seas by means of fishing licenses; adoption of regulations pertaining to these licenses; the establishment of a national record of fishing vessels authorized to fish on the high seas; requirements for marking of fishing vessels and fishing gear; requirements for recording and timely reporting of vessel position, catch, fishing effort and other fisheries data; requirements for verifying catch; monitoring, control and surveillance of such vessels by inspection schemes, observer programmes and vessel monitoring systems, and regulation of transshipment on the high seas to ensure compliance with subregional, regional and global measures.³⁶³

³⁶⁰ Syma Ebbin, Alf Hadon Hoel and Are K. Sydnes, *A Sea Change: The Exclusive Economic Zone and Governance Institutions* (Springer Publications, 2005) 124. Article 94 of the *LOSC* requires every State to effectively exercise jurisdiction and control in administrative, technical and social matters over ships flying its flag. The flag State must therefore maintain a register of ships containing the names and particulars of ships flying its flag and assume jurisdiction over each ship, its master, officers and crew in respect of administrative, technical and social matters concerning the ship.

³⁶¹ *UN Fish Stocks Agreement*, Art. 18(1).

³⁶² *UN Fish Stocks Agreement*, Art. 18(2).

³⁶³ *UN Fish Stocks Agreement*, Art. 18(3).

Article 19 of the UN Fish Stocks Agreement provides for a plethora of compliance and enforcement obligations on the part of the flag State. In this regard, the flag State is required to monitor its vessels fishing on the high seas and in the EEZ and to ensure compliance with conservation and management measures implemented by the applicable RFMO. Flag States are also required to cooperate in the investigation and sanctioning of any infractions by its vessels or nationals in the relevant fishing zones. In this regard, the onus is primarily on the flag State to ensure compliance with the relevant measures and enforce them irrespective of where the violations occur.³⁶⁴

The element of cooperation is reflected in article 20 of the UN Fish Stocks Agreement which requires the flag State to request for assistance from other States regarding investigation of an alleged violation. The progress and outcome of such investigations should be availed to all States having an interest in, or affected by, the alleged violation.³⁶⁵ Upon notification by another State of an alleged violation, the flag State must respond accordingly and take enforcement action with respect to the vessel if the evidence so warrants.³⁶⁶

There are exceptions to exclusive flag State jurisdiction with respect to fishing vessels on the high seas.³⁶⁷ The UN Fish Stocks Agreement deviates from the rules of customary international law by giving enforcement powers on the high seas, to other parties to the Agreement in addition to the flag States. In connection with this, the Agreement provides a framework for regional cooperation in enforcement,³⁶⁸ and further, gives a State party which is a member of an RFMO, the right to board and inspect fishing vessels flying the flag of another State party, so as to ensure compliance with conservation and management measures for tuna stocks, whether such a State party is a member of the RFMO or not.³⁶⁹ Essentially, a State party to the UN Fish Stocks Agreement, and whose vessels fish in the region must adhere to the management measures adopted by the RFMO of which it is not a member. If such an inspection

³⁶⁴ *UN Fish Stocks Agreement*, Art. 19(1)(a).

³⁶⁵ *UN Fish Stocks Agreement*, Art. 20(3).

³⁶⁶ *UN Fish Stocks Agreement*, Art. 21(6).

³⁶⁷ *LOSC*, Art. 92(1). For exceptions to exclusive flag State jurisdiction, see *LOSC*, Art. 110(1) and (2).

³⁶⁸ *UN Fish Stocks Agreement*, Article 20.

³⁶⁹ *UN Fish Stocks Agreement*, Article 21(1). The basic procedures for boarding and inspection are stipulated in Article 22 of the *UN Fish Stocks Agreement*.

confirms any violation of the RFMOs measures, the relevant enforcement action should be effected.³⁷⁰

Related to the obligation of flag States to take enforcement action is port State control. Although unrelated to fisheries, the LOSC recognises sovereign rights of the coastal State over its ports.³⁷¹ The UN Fish Stocks Agreement is more precise concerning port State control of fishing vessels and recognises the right and duty of a port State to take measures in this regard.³⁷² Pursuant to article 23 of the UN Fish Stocks Agreement, port States are also given enforcement powers to take action against vessels visiting their ports. As a result, a port State may, *inter alia*, inspect documents, fishing gear and catch on board fishing vessels when fishing vessels are voluntarily in its ports or at its offshore terminals.³⁷³ Port States are encouraged to adopt regulations empowering the relevant national authorities to prohibit landings and transshipments of catch that has been taken in a manner which undermines the effectiveness of subregional, regional or global conservation and management measures on the high seas.³⁷⁴

2.2.3.3.3 Practice of RFMOs Regarding Enforcement on the High Seas

Within their management regimes, RFMOs have adopted measures directed at promoting compliance with the enforcement measures established in respect of their members. Regarding flag State duties, the measures adopted by ICCAT and WCPFC are quite comprehensive and consistent with the provisions of the LOSC and UN Fish Stocks Agreement. ICCAT requires flag Contracting Parties, Cooperating-non-Contracting Parties (CPCs), Entities or Fishing Entities whose vessels fish in the ICCAT Convention area to, *inter alia*, adopt the relevant measures to enable their vessels comply with and not undermine ICCAT conservation and management measures; authorize their vessels to fish in ICCAT Convention area by means of fishing

³⁷⁰ *UN Fish Stocks Agreement*, Art. 21(5-8).

³⁷¹ Article 25(2) of the *LOSC*, gives the port State authority to take necessary steps to prevent any breach of the conditions related to ships calling into its ports; According to Article 218 of the *LOSC* a port State may investigate and institute proceedings in respect of any discharge from a vessel in its port which violates applicable international rules, as a means of regulating port access.

³⁷² *UN Fish Stocks Agreement*, Art. 23(1). A port State has the right and duty to take measures, in accordance with international law, to promote the effectiveness of subregional, regional and global conservation and management measures.

³⁷³ *UN Fish Stocks Agreement*, Art. 23(2).

³⁷⁴ *UN Fish Stocks Agreement*, Art. 23(3).

authorisation, licenses or permits; not to authorize their vessels to fish in the ICCAT Convention area unless they can effectively exercise responsibility in respect to such vessels, including monitoring and controlling their fishing activities; and investigate and follow up on an alleged violation by a vessel.³⁷⁵

Each CPC is also required to maintain an up-to-date record of fishing vessels authorized to fish in the ICCAT Convention area and to mark such vessels and fishing gear accordingly.³⁷⁶ ICCAT subjects fishing vessels to a data recording system³⁷⁷ and a record of vessels.³⁷⁸ It is notable that, unlike the WCPFC, ICCAT has not adopted measures regarding the application of sanctions in response to violations. The WCPF Convention stipulates that sanctions applicable in respect of violations shall be adequate in severity to be effective in securing compliance and to discourage violations wherever they occur and deprive offenders of the benefits accruing from their illegal activity.³⁷⁹

As to port State measures, ICCAT, WCPFC, CCSBT and IATTC have adopted some terms and conditions regarding port State control of fishing vessels. ICCAT provides for port inspection schemes requiring inspection of fish, fishing gears and documents,³⁸⁰ and also requires port State parties to allow vessels to land or tranship fish only after an inspection has been carried out.³⁸¹ ICCAT has also established a comprehensive list of requirements and port State verification measures for transshipment operations in ports by large scale tuna vessels (LSTVs) of CPCs.³⁸² The WCPFC port State measures are similar to those required under Article 23 of the UN Fish Stocks Agreement.³⁸³ CCSBT on the other hand only prohibits landings of SBT by

³⁷⁵ ICCAT, *Recommendation Concerning the Duties of CPCs in Relation to their Vessels Fishing in the ICCAT Convention Area* (Recommendation 03-12).

³⁷⁶ ICCAT, *Recommendation Concerning the Duties of CPCs in Relation to their Vessels Fishing in the ICCAT Convention Area* (Recommendation 03-12).

³⁷⁷ ICCAT, *Recommendation Concerning the Recording of Catch by Fishing Vessels in the ICCAT Convention Area* (Recommendation 03-13).

³⁷⁸ ICCAT, *Recommendation Concerning the Establishment of an ICCAT Record of Vessels Over 24 Meters Authorized to Operate in the Convention Area* (Recommendation 02-22).

³⁷⁹ WCPFC Convention, Art. 25(7).

³⁸⁰ ICCAT, *Recommendation for a Revised ICCAT Port Inspection Scheme* (Recommendation 97-10).

³⁸¹ ICCAT, *Recommendation Concerning the ban on Landings and Transshipments of Vessels from Non-Contracting Parties Identified as Having Committed a Serious Infringement* (Recommendation 98-11).

³⁸² ICCAT, *Recommendation Establishing a Programme for Transshipment* (Recommendation 06-11) Annex III.

³⁸³ WCPF Convention, Art. 27.

vessels that are not on the authorised vessel list,³⁸⁴ while IATTC prohibits the landing and transshipment of fish products from IUU-listed vessels.³⁸⁵

The FAO recognises port State control as a very useful tool in deterring IUU fishing activities.³⁸⁶ On this point, the FAO Committee on Fisheries endorsed a Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated Fishing, a non-binding international instrument describing minimum port State measures to be applied by port States and RFMOs to any vessels involved in fishing activities, including support ships and carrier vessels.³⁸⁷ Based on the Model Scheme, FAO has developed a legally-binding instrument on port State measures with the intention to harmonise port State controls.³⁸⁸ Port contact of fishing vessels is instrumental in the verification of tuna catch data and can aid in detecting violations by flag States. Many RFMOs have begun implementing the measures recommended by the FAO Port State Model Scheme.

A key component of enforcement in tuna fisheries is monitoring, control and surveillance (MCS).³⁸⁹ The purpose of MCS is to ensure that fisheries management

³⁸⁴ CCSBT, *Resolution on Amendment of the Resolution on “Illegal, Unregulated and Unreported Fishing (IUU) and Establishment of a CCSBT Record of Vessels over 24 Meters Authorized to Fish for Southern Bluefin Tuna*. Adopted at the 15th Annual Meeting, 14-17 October 2008.

³⁸⁵ IATTC, *Resolution to Establish a List of Vessels Presumed to have Carried out Illegal, Unreported, and Unregulated Fishing Activities in the Eastern Pacific Ocean (Resolution C-05-07)*.

³⁸⁶ See, High Seas Task Force, *Closing the net: Stopping illegal fishing on the high seas* (2006). <http://www.high-seas.org> (accessed 20 July 2010); FAO, *Report of the Technical Consultation to Review Port State Measures to Combat Illegal, Unreported and Unregulated Fishing*, Rome, 31 August- 2 September 2004. FAO Fisheries Report No. 759.; *Report of the Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, New York, 22-26 May 2006. <http://daccess-dds-ny.un.org> (accessed 20 July 2010).

³⁸⁷ FAO, *Report of the Twenty-sixth Session of the Committee on Fisheries*. Rome, 7-11 March 2005. FAO Fisheries Report No. 780, (FAO, 2007) para 25. In this case fishing vessels flagged to non-members of RFMOs can only land, process or tranship fish taken in accordance with the relevant conservation measures.

³⁸⁸ FAO, *Report of the Twenty-seventh Session of the Committee on Fisheries*. Rome, 5-9 March 2007. FAO Fisheries Report No. 830, (FAO, 2007) para 68; FAO, *Report of the Twenty-eighth Session of the Committee on Fisheries*. Rome, 2-6 March 2009. FAO Fisheries and Aquaculture Report No. 902 (FAO, 2009) para 63-73. See also, FAO, *Model Scheme on port State Measures to Combat Illegal, Unreported and Unregulated Fishing* (FAO, 2007).

³⁸⁹ According to FAO, Monitoring is the continuous requirement for the measurement of fishing effort characteristics and resource yields; Control is the regulatory conditions under which the exploitation of the resource may be conducted; and Surveillance is the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities. See P. Flewelling, *An Introduction to Monitoring, Control and Surveillance Systems for Capture Fisheries*, FAO Fisheries Technical Paper 338 (FAO, 1999).

measures are implemented fully in an efficient and speedy manner.³⁹⁰ The underpinning objective for all MCS programmes is to facilitate sustainable resource use.³⁹¹ The MCS tools that may be employed by States include vessels monitoring system (VMS), vessel registers, observers, and boarding and inspection. The UN Fish Stocks Agreement requires cooperation by all States with respect to compliance with and enforcement of conservation and management measures for straddling and highly migratory fish stocks,³⁹² and provides an array of MCS measures to be taken by the flag State in respect of vessels flying its flag.³⁹³

To reinforce the effective exercise of flag States' responsibility for fishing vessels flying their flag, RFMOs have established MCS measures including boarding and inspection of tuna fishing vessels, VMS, and regional observer programmes. WCPFC stipulates the boarding and inspection procedures to be applied by its members,³⁹⁴ while CCSBT, ICCAT and IATTC have established programmes to monitor transshipments of tuna at sea.³⁹⁵ CCSBT requires that an observer be on board the carrier vessel during the transshipment,³⁹⁶ while ICCAT and IATTC require that all transshipment operations of tuna and tuna-like species take place in port.³⁹⁷ In addition, IATTC requires observers on large scale purse seine vessels. The requirement for transshipments in port serves to reduce the incidences of laundering of catch resulting from the difficulties of monitoring at-sea transshipments.³⁹⁸ The CCSBT transshipment

³⁹⁰ FAO, *Essential Role of Monitoring, Control and Surveillance in Fisheries Management*, Twenty second session of the Committee on Fisheries, Rome, Italy 17-20 March 1997.

³⁹¹ P Flewelling, *An Introduction to monitoring, control and surveillance systems for capture*, FAO Fisheries Technical Paper 338 (FAO, 1994).

³⁹² *UN Fish Stocks Agreement*, Art. 20(1).

³⁹³ *UN Fish Stocks Agreement*, Art. 18(3).

³⁹⁴ WCPFC, *Boarding and Inspection Procedures (Conservation and Management Measure 2006-08)*. WCPFC provides that any violations detected through inspections by authorised officers ought to be dealt with accordingly.

³⁹⁵ See, *Resolution on establishing a programme for transshipment by large-scale fishing vessels* (2008)<http://www.ccsbt.org>; *Recommendation by ICCAT establishing a programme for transshipment*. <http://www.iccat.int> (Accessed 25 November 2009). The provision of CCSBT applies to tuna longline fishing vessels with freezing capacity as well as authorised carrier vessels.

³⁹⁶ Monitoring of SBT at sea. <http://www.ccsbt.org> (accessed 26 November 2009).

³⁹⁷ ICCAT, *Recommendation establishing a programme for transshipment*(*Recommendation 06-11*); IATTC, *Resolution on Establishing a Programme for Transshipments by Large-Scale Fishing Vessels* (*Resolution C-08-02*).

³⁹⁸ Rosemary Rayfuse, *The anthropocene, autopoiesis disingenuousness of the genuine link: addressing enforcement gaps in the legal regime for areas beyond national jurisdiction*, A paper presented at the Fourth J W H Verzijl Memorial Symposium on 'The Legal Regime of Areas beyond National

program is harmonised with those of the IOTC and ICCAT.³⁹⁹ Both ICCAT and IATTC have established requirements for VMS.⁴⁰⁰ Although compliance is still a challenge for most RFMOs, better coordination and cooperation among them could improve their performance.

2.6 Conclusion

This chapter first reviewed the biology of tuna as a basis for the development of the international legal framework for the sustainable management of tuna fisheries.

Second, an overview of the evolutionary development of the international legal framework governing tuna from the period of the regime of freedom of fishing on the high seas to the management of tuna under the LOSC has been presented. The provisions of the LOSC concerning fisheries in the EEZ have been examined, and attention has been devoted specifically to the additional legal requirements for highly migratory fish stocks like tuna. These requirements include the duty of cooperation between States to manage and conserve tuna in the EEZ and on the high seas. The efforts of the LOSC have been supplemented by the UN Fish Stocks Agreement, and RFMOs established to facilitate cooperation between States. It is established that such cooperation can only be achieved through negotiation in good faith.

Finally, the chapter examined the provisions that draw attention to the elements of cooperation established under the LOSC and the UN Fish Stocks Agreement and the approaches adopted by tuna RFMOs to implement them. It is established that measures such as the determination of TAC and data contribution for tuna fisheries remain difficult for most coastal States to achieve making it hard for RFMOs to meet their conservation and management objectives. The difficulty of allocating fishing opportunities/quotas and enforcing them, often results in States breaching their quota limits or RFMOs increasing TAC levels thereby threatening the sustainability of tuna fish stocks. RFMOs play a central role in achieving the conservation and management objectives of the high seas segment of tuna fisheries.

Jurisdiction: Current Principles and Frameworks and Future Directions', held at the University of Utrecht, 21 November 2008.

³⁹⁹ Transshipment <http://www.ccsbt.org> (accessed 26 November 2009).

⁴⁰⁰ ICCAT, *Recommendation Concerning Minimum Standards for the Establishment of a VMS in the ICCAT convention Area (Recommendation 03-14)*; IATTC, *Resolution on the Establishment of a Vessel-Monitoring System (Resolution C-04-06)*.

CHAPTER 3

THE REGIONAL INSTITUTIONAL FRAMEWORK FOR TUNA MANAGEMENT IN THE INDIAN OCEAN

3.1 Introduction

As seen in chapter 2, the UN Fish Stocks Agreement establishes the role of RFMOs as the mechanism through which international management of tuna fisheries can be achieved both in the EEZs and on the high seas. Essentially, RFMOs have a responsibility to adopt appropriate conservation and management measures to ensure the long-term sustainability of tuna stocks under their purview as required under international law. Cooperation among the States involved in the Indian Ocean tuna fisheries is achieved through the Indian Ocean Tuna Commission (IOTC).

The objective of this chapter is to review the regional institutional framework for the management of the tuna resources of the Indian Ocean. This chapter is of two parts. The first section provides a background to the governance framework for tuna resources of the Indian Ocean prior to the establishment of the IOTC. This section is necessarily descriptive, in order to provide a review of the events leading up to the establishment of the IOTC. In the second section, the establishment of the IOTC is discussed including the relevant provisions of the Agreement for the Establishment of the IOTC,¹ which is the basic document establishing the structure of the Commission. The IOTC Agreement stipulates the objectives, functions and resources of the IOTC as well as its area of competence. In addition, the Agreement provides for decision making processes, regulates membership, decision-making and voting. The rules adopted by the IOTC to manage the Indian Ocean tuna resources are analysed in chapter 4.

3.2 The Management of Tuna Fisheries in the Indian Ocean Prior to the Establishment of the IOTC

The need for the establishment of an organisation devoted to the management of Indian Ocean tuna fisheries was prompted by the significant increase in the artisanal and industrial catches of tuna and tuna-like species in the region in the 1980s.² During this

¹ Agreement for the Establishment of the IOTC <http://www.iotc.org/>, hereinafter the IOTC Agreement. (accessed 10 August 2010).

² J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996). The catch of tuna and tuna-like species rose from 150,000 in the early 1960s to 306, 905 in 1980, and to 566,231 in 1985. Industrial catches were mainly by Japan, Korea and Taiwan.

time, the tuna fishing fleet of the European Community (EC) established its interests in the Western Indian Ocean, specifically in Seychelles which has remained the most important transshipment port in the region to date.³ The response to increased fishing pressure on the region's tuna fisheries was the establishment of an organisation with the appropriate management structure and authority capable of responding to the challenges brought about by such an increase.

The relevant issues concerning such an organisation were identified following two government consultation sessions in Rome in 1987 and in Bangkok in 1988 respectively. Prior to the establishment of such an organisation, the living marine resources of the Indian Ocean (inshore, offshore and oceanic) were under the mandate of two subsidiary bodies established within the framework of FAO, namely, the *Indian Ocean Fishery Commission* (IOFC) and the *Indo-Pacific Fishery Commission* (IPFIC).⁴ A third organisation, the *Western Indian Ocean Tuna Commission* (WIOTO),⁵ was also in operation to cater for the concerns of the small island States.

3.2.1 The Indian Ocean Fishery Commission (IOFC)

The IOFC was established in 1967 by *Resolution 2/48* adopted by the FAO Council at its forty-eighth Session under Article VI(I) of the FAO Constitution.⁶ Article VI(I) of the FAO Constitution enables the Conference or the Council to establish Commissions.⁷ The area of competence of the IOFC included the Indian Ocean and adjacent seas excluding the Antarctic area and coinciding with FAO Statistical Areas 51 (Western Indian Ocean) and 57 (Eastern Indian Ocean). The IOFC which covered all living marine resources was mandated to promote, assist and coordinate national programmes for fishery development and conservation; to promote research and

³ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996).

⁴ Kathleen A Miller, 'Climate Variability and Tropical Tuna: Management Challenges for Highly Migratory Fish Stocks' (2007)31 *Marine Policy* 56, 67.

⁵ S M Marashi, *Summary Information on the Role of International Fishery and other Bodies with Regard to the Conservation and Management of Living Resources of the High Seas*, FAO Fisheries Circular No. C908 (FAO, 1996).

⁶ Ibid.

⁷ See FAO, *The Basic Texts of the Food and Agriculture Organisation of the United Nations*, Article VI(I), (Volumes I and II, 2000 edition).

development activities in the area; and to address management problems, with special emphasis on the management of offshore resources.⁸

The membership of the IOFC was open to Member States and Associate Members of the FAO.⁹ At the inception, the IOFC had three priorities for action, namely, the improvement of fisheries statistics; the management of heavily exploited stocks; and development of international programmes in the Indian Ocean region.¹⁰ However these objectives were difficult to achieve as the IOFC had no regulatory powers.¹¹ Hence, the IOFC established a committee whose role was to provide the necessary assistance in formulating management measures for heavily exploited tuna stocks in 1968.¹² However, the committee focused its attention on monitoring tuna fishing activities and reviewing the State of tuna and did not particularly provide advice on specific measures for managing tuna.¹³

The realisation that the management of tuna in the region required proper institutional structures and expertise created a need for the IOFC jointly with the IPFIC to initiate a broad coordination and implementation programme of tuna fishery development. By restructuring the membership of the committee in 1980 and re-establishing its terms of reference, the IOFC started achieving improved technical and scientific advice relating to Indian Ocean tuna by 1985.¹⁴ In the meantime, investigations for a broad coordination and implementation programme had been initiated in the late seventies through the Indo-Pacific Tuna Development and

⁸ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996).

⁹ FAO, *The Basic Texts of the Food and Agriculture Organisation of the United Nations*, Article VI(I), (Volumes I and II, 2000 edition).

¹⁰ Izzat Feidi, *Post-evaluation Study of the Indian Ocean Fishery Commission: Committee for the Development and Management of the Fishery Resources of the Gulfs*, FAO Fisheries Circular No.984. (FAO, 2002) 3.

¹¹ Netherlands Institute for the Law of the Sea-Documentary Yearbook, *International Organizations and the Law of the Sea*, (Martinus Nijhoff Publishers, 1996) 565.

¹² J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996). This was the Committee for the Management of Indian Ocean Tuna established at IOFC's First Session in 1968 and the membership was made up of Australia, India, Indonesia, Japan, Korea (Republic of), Sri Lanka, Tanzania and USA.

¹³ The reason could have been that the members of the committee lacked the expertise especially considering that the majority were developing coastal States.

¹⁴ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996). The membership of the committee was open to all States and this improved the level of expertise and input.

Management Programme.¹⁵ The technical and scientific advice from the committee was thus instrumental in the decisions made with the support of the Indo-Pacific Tuna Development and Management Programme in respect of the Indian Ocean Tuna fishery. The Indo-Pacific Tuna Development and Management Programme held expert consultation sessions prior to the meetings of the IOFC committee and provided the necessary scientific advice.¹⁶ As a result of various consultations between the IOFC and IPFC, the IOFC tuna committee at its tenth session in 1988 arrived at a conclusion that there was a need to establish institutional arrangements which would be suitable for the formulation, adoption and implementation of management measures for the Indian Ocean tuna fisheries.¹⁷ A number of government consultation sessions were held in order to design the arrangements for the establishment of the IOTC. It was agreed that the new body for managing Indian Ocean tuna should be established within the framework of FAO.

Upon the establishment of the IOTC, the IOFC lost its main function of managing tuna and tuna-like species in the Indian Ocean.¹⁸ Two main issues contributed to the failure of the IOFC. First, the financial constraints on IOFC made it difficult for it to meet its obligations, as its funding was derived from the FAO and contributions of donors and the participating States.¹⁹ Such funding was insufficient and caused delays or even cancellations of regular sessions and implementation of the IOFC's recommendations.²⁰ Second, the attendance and participation of members at sessions was very poor, making it difficult for decisions to be made.²¹ Thus, it became necessary to restructure the IOFC to include proper institutional and financial support and

¹⁵ Ibid. The financial and technical support for IPTP was provided mainly by the United Nations Development Programme (UNDP), FAO and Japan. Other participating States and donors also provided support at later stages.

¹⁶ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996).

¹⁷ Ibid.

¹⁸ Izzat Feidi, *Post-evaluation Study of the Indian Ocean Fishery Commission: Committee for the Development and Management of the Fishery Resources of the Gulfs*, FAO Fisheries Circular No.984. (FAO, 2002) 4.

¹⁹ S M Marashi, *Summary Information on the Role of International Fishery and other Bodies with Regard to the Conservation and Management of Living Resources of the High Seas*, FAO Fisheries Circular No. C908 (FAO, 1996). This included fisheries in the Gulf, Bay of Bengal and South West Indian Ocean.

²⁰ Ibid. In ten years, the IOFC had only three sessions.

²¹ Ibid. The last session of the IOFC in 1994 had only 14 out of 45 members in attendance and this was not enough for a quorum necessary for decision making.

commitments, including financial commitment, by the members.²² Once the IOTC was formed, the fisheries management of other fish stocks which were more localized remained under the subsidiary committees of the IOFC at sub-regional level.²³ As the functions of the IOFC had become obsolete, it was abolished by Resolution 1/116 of the FAO, in 1999.²⁴

3.2.2 The Asia-Pacific Fishery Commission

The Asia-Pacific Fishery Commission (APFIC)²⁵ was initially established as the Indo-Pacific Fisheries Council.²⁶ The APFIC was the first of ten Regional Fisheries Bodies established by FAO.²⁷ The mandate of APFIC is to promote the full and proper utilisation of living aquatic resources in the Asia-Pacific region through international cooperation.²⁸ The long-term objective of APFIC is to ‘promote the full and proper utilization of living aquatic resources by the development and management of fishing and culture operations and by the development of related processing and marketing activities in conformity with the objectives of its members’.²⁹ APFIC is constantly reviewing the functions and structure of the Commission to accommodate the changes in global fisheries and recognises the urgency for its members to adopt the relevant international instruments for the long-term sustainability of fisheries resources.³⁰

²² Ibid.

²³ S M Marashi, *Summary Information on the Role of International Fishery and other Bodies with Regard to the Conservation and Management of Living Resources of the High Seas*, FAO Fisheries Circular No. C908 (FAO, 1996). This included fisheries in the Gulf, Bay of Bengal and South West Indian Ocean.

²⁴ Judith Swan, *Regional Fishery Bodies and Governance: Issues, Actions and Future Directions*, FAO Fisheries Circular No. 959 (FAO, 2000).

²⁵ The Asia-Pacific Fishery Commission (APFIC), established by the *Agreement for the Establishment of the Asia-Pacific Fishery Commission* 1948 under Article XIV of the FAO Constitution.

²⁶ <http://www.apfic.org> (accessed 11 August 2010).

²⁷ Deb Menasveta, *APFIC: Its Evolution, Achievements and Future Direction* (FAO, 1998). 50th Anniversary-Asia-Pacific Fishery Commission. The current membership of APFIC is comprised of Australia, Bangladesh, Cambodia, China, France, India, Indonesia, Japan, South Korea, Malaysia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Vietnam, Sri Lanka, Thailand, United Kingdom and United States of America.

²⁸ *Agreement for the Establishment of the Asia-Pacific Fishery Commission*. <http://www.apfic.org> (accessed 10 December 2009).

²⁹ Deb Menasveta, *APFIC: Its Evolution, Achievements and Future Direction* (FAO, 1998). 50th Anniversary-Asia-Pacific Fishery Commission.

³⁰ Ibid.

3.2.3 Western Indian Ocean Tuna Commission (WIOTO)

Aside from the IOFC and APFIC, another organisation that has been involved in the conservation and management of tuna and tuna-like species in the Indian Ocean prior to the establishment of the IOTC is the Western Indian Ocean Tuna Commission. WIOTO was established in 1991 and entered into force in 1994.³¹ WIOTO, which is no longer operative had been established in the interests of the small island States of the Southwest Indian Ocean region whose needs did not seem to be addressed by the prevailing FAO initiatives in the region at the material time.³² Its objectives included harmonization of fisheries policies; relations with DWFNs; fisheries surveillance and enforcement; fisheries development; and access to EEZs of members.³³ The funding States to WIOTO included Kenya, Seychelles, Comoros, Tanzania, Mozambique, India, Maldives, Madagascar, Mauritius and Sri Lanka.³⁴

3.3 The IOTC Historical Background

As the fishing activities of DWFNs in the Indian Ocean increased, so did the catch of tuna. As a result of these activities, it became evident that the long-term institutional arrangements for the management and regulation of tuna fishing in the region needed to be established. Additionally, the funding which was directed towards the provision of scientific information important for management of tuna stocks in the region appeared uncertain.³⁵

After a series of government consultations, the IOFC Committee for the Management of Indian Ocean tuna adopted the solutions from these consultations and at its tenth session acknowledged the need to establish a new body in accordance with the provisions of Article XIV of the FAO Constitution.³⁶ By establishing an institution

³¹ S M Marashi, *Summary Information on the Role of International Fishery and other Bodies with Regard to the Conservation and Management of Living Resources of the High Seas*, FAO Fisheries Circular No. C908 (FAO, 1996).

³² <http://www.intfish.plus.com> (accessed on 16 December 2009).

³³ S M Marashi, *Summary Information on the Role of International Fishery and other Bodies with Regard to the Conservation and Management of Living Resources of the High Seas*, FAO Fisheries Circular No. C908 (FAO, 1996).

³⁴ Ibid.

³⁵ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996).

³⁶ Ibid. The tenth session of the IOFC took place in Moka, Mauritius in 1988.

within the framework of FAO, it was understood that the new body could maintain a certain degree of autonomy, but at the same time, benefit from the financial and technical support provided by the organisation.³⁷ Thus, a draft Agreement for the establishment of IOTC was prepared by FAO incorporating the views of members and was reviewed accordingly.³⁸

3.3.1 An FAO, Article XIV Commission

The support provided by FAO to RFMOs is fundamental to enhancing their operations in promoting the long-term sustainability of fisheries through their conservation and management efforts. This is most significant for tuna fisheries whose management requires international cooperation. It is thus necessary to illustrate the role of the FAO in setting up RFMOs such as the IOTC under its constitution.

The proposition to establish the IOTC was in accordance to the provisions of Article XIV of the FAO Constitution. The work of FAO through RFMOs like IOTC aims to promote international fisheries cooperation in order to improve the conservation and management of fisheries resources. To date, ten FAO regional fisheries bodies (RFBs) have been established in accordance with either Article VI or Article XIV of the FAO constitution.³⁹ The former category of RFBs only performs advisory duties and is dependent on FAO for financial and administrative support,⁴⁰ while the latter are more autonomous and can provide for additional contractual obligations among States parties, apart from the obligations already assumed under the FAO Constitution.⁴¹

³⁷ Ibid.

³⁸ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996); Gail Lugten, *A Review of Measures Taken by Marine Fishery Bodies to Address Contemporary Fishery Issues*, FAO Fisheries Circular No. 940 (FAO, 1999). The draft Agreement was also circulated to former Soviet Union, EC, FFA, IATTC, ICCAT and the South Pacific Commission.

³⁹ FAO, *Strengthening Regional Fisheries Management Organisations and their Performances Including the Outcome of the 2007 Tuna RFMOs Meeting*, Twenty- Seventh Session of the FAO Committee on Fisheries, Rome, Italy 5-9 March 2007. FAO provides technical and administrative support to its RFBs which are constantly being reviewed and evaluated by their members.

⁴⁰ Gail Lugten, *A Review of Measures Taken by Marine Fishery Bodies to Address Contemporary Fishery Issues*, FAO Fisheries Circular No. 940 (FAO, 1999). Examples of these are; CECAF, CIFFA, WECAFC, COPESCAL.

⁴¹ Gail Lugten, *A Review of Measures Taken by Marine Fishery Bodies to Address Contemporary Fishery Issues*, FAO Fisheries Circular No. 940 (FAO, 1999). RFBs established under Article XIV of FAO include the Indian Ocean Tuna Commission (IOTC), General Fisheries Commission for the Mediterranean (GFCM), and Asia-Pacific Fishery Commission (APFIC) and Regional Commission for Fisheries (RECOFI).

The category of RFBs that is relevant to the present thesis fall under FAO Article XIV Commissions. An example of an RFB established under Article XIV of the FAO Constitution is APFIC, which is one of the longest standing RFBs in the world.⁴² APFIC has an advisory role and provides its members with scientific and management advice. In this regard, the Agreement establishing APFIC provides a mandate for the Commission to formulate and recommend measures, and to initiate and carry out programmes or projects to conserve and manage resources.⁴³ Also referred to as RFBs, RFMOs are differentiated from RFBs as they have a management mandate. FAO defines RFMOs as “intergovernmental fisheries organizations or arrangements, as appropriate that have the competence to establish fisheries conservation and management measures”.⁴⁴ Aside from the IOTC, the General Fisheries Commission for the Mediterranean is an RFMO mandated to formulate and recommend measures for the conservation of living marine resources including, *inter alia*, regulating fishing methods and fishing gear, and regulating total catch and effort allocations amongst members.⁴⁵

The FAO is mandated to collect, analyse, interpret and disseminate information relating to food, nutrition and agriculture, including fisheries and marine products.⁴⁶ In addition, the organisation is mandated to promote, and where appropriate recommend national and international action in respect to, *inter alia*, conservation of natural resources and the adoption of international policies with respect to agricultural commodity arrangements.⁴⁷ In this regard, the FAO recognises the essential role played by RFMOs like IOTC in reinforcing regional cooperation concerning the conservation and management of tuna.⁴⁸ Correspondingly, chapter 2 illustrated the emphasis international fisheries instruments place on the duty of States to cooperate either directly

⁴² FAO, *Handbook on Regional Fishery Bodies and Arrangements in Asia and the Pacific* (FAO, Bangkok, Thailand, 2004) V.

⁴³ *Agreement for the Establishment of the Asia-Pacific Fishery Commission*, Article IV. <http://www.apfic.org/> (accessed 4 August 2010).

⁴⁴ <http://www.fao.org> (accessed 4 August 2010).

⁴⁵ *Agreement for the Establishment of the General Fisheries Commission for the Mediterranean*, Article III (1)(b)(i), <ftp://ftp.fao.org> (accessed 4 August 2010).

⁴⁶ *The Basic Texts of the Food and Agricultural Organisation of the United Nations*, Article I(1). <http://www.fao.org> (accessed 4 August 2010).

⁴⁷ *The Basic Texts of the Food and Agricultural Organisation of the United Nations*, Article I(2). <http://www.fao.org> (accessed 4 August 2010).

⁴⁸ FAO, *Report of the High-Level Panel of External Experts in Fisheries* held in Rome, Italy, 15-19 February 1998; FAO, *Twenty-third Session of the Committee on Fisheries*, Rome, Italy 15-19 February 1999, para. 26 & 32.

or through subregional or regional organisations in the conservation and management of tuna. The FAO plays a significant role in supporting RFMOs by dealing with issues that hamper their effectiveness such as overcapacity and improvement of fleet capacity.⁴⁹

3.3.2 Agreement for the Establishment of the Indian Ocean Tuna Commission

The amendment of Part R of the Basic Texts of the FAO in 1991, established more flexibility and autonomy for Article XIV Commissions, and gave them more extensive responsibility and authority.⁵⁰ Part R addresses the “principles and procedures which should govern conventions and agreements concluded under Articles XIV and XV of the Constitution, and Commissions and Committees established under Article VI of the constitution”.⁵¹ To this end the FAO Conference revised Resolution 46/57 by Resolution 8/91, enabling Article XIV Commissions, among other things, to establish autonomous budgets in anticipation of the establishment of IOTC.⁵²

The first conference for the Adoption of a *draft Agreement for the establishment of the Indian Ocean Tuna Commission* was held in 1989 followed by a technical conference in 1992.⁵³ The Agreement for the Establishment of the IOTC,⁵⁴ was adopted in 1993, endorsed by IOFC in 1994, and entered into force on 27 March 1996, thus enabling the IOTC to become fully operative.⁵⁵ The IOTC Agreement empowers the Commission to adopt binding conservation and management measures,⁵⁶ and also defines IOTC’s Area of competence.⁵⁷ The IOTC Agreement requires members of the

⁴⁹ Strengthening Regional Fisheries Governance. <http://www.fao.org> (accessed 4 August 2010).

⁵⁰ FAO, *Strengthening FAO Regional Fishery Bodies, Twenty-second Session of the Committee on Fisheries*, Rome, Italy 17-20 March 1997, para. 13; FAO, *Report of the Conference of FAO, Twenty-sixth Session*, Rome, 9-27 November 1991, para. 308-311. <http://www.fao.org> (accessed 5 August 2010).

⁵¹ *The Basic Texts of the Food and Agricultural Organisation of the United Nations*, Part R. <http://www.fao.org> (accessed 4 August 2010).

⁵² FAO, *Report of the Conference of FAO, Twenty-sixth Session*, Rome, 9-27 November 1991, para. 308-311. <http://www.fao.org> (accessed 5 August 2010). These amendments affected Articles II, XIV, XV and XVIII.

⁵³ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996).

⁵⁴ *The IOTC Agreement* is also referred to as the IOTC Convention.

⁵⁵ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996). The Twenty-seventh Session of the FAO Conference.

⁵⁶ *The Agreement for the Establishment of the Indian Ocean Tuna Commission*, Article IX(1). <http://www.iotc.org> (accessed 5 August 2010).

⁵⁷ *The IOTC Agreement*, Article II.

Commission to ensure that their national legislation is consistent with the provisions of the Agreement.⁵⁸

The IOTC Agreement takes cognizance of certain provisions of the LOSC. In particular, the provisions of Articles 56, 64, and 116-119 of the *LOSC* are acknowledged. These articles address the rights, jurisdiction and duties of the coastal State in the EEZ, highly migratory species, and conservation and management of high seas resources respectively.⁵⁹ These aspects are fundamental to the conservation and management of tuna stocks in the region. The functions that underline the management role of the IOTC are facilitated by, *inter alia*, its organisational structure, membership, decision-making, funding and the general administration of the Commission. These factors are examined in the following section.

3.4 The Indian Ocean Tuna Commission

The Agreement that establishes an RFMO dictates its mandate, and ideally reflects the relevant international law and internationally-agreed standards for the management of fish stocks under its purview.⁶⁰ Thus, the mandate of the IOTC is twofold. First, The IOTC derives its mandate from the IOTC Agreement. The objective of the Agreement and hence, the mandate of the IOTC, is ‘to promote cooperation among its Members with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks and encouraging sustainable development of fisheries based on such stocks’.⁶¹

Second, is the mandate derived from the commitment made by member States of the Commission in international agreements, some of which are legally binding. A great majority of the IOTC members are States Parties to the LOSC and the UN Fish Stocks Agreement which require them to cooperate through the IOTC to discharge certain obligations in respect of the conservation and management of tuna stocks. Among the non-binding instruments in which members of the Commission have made

⁵⁸ *The IOTC Agreement*, Article X(1). <http://www.iotc.org> (accessed 5 August 2010).

⁵⁹ *The IOTC Agreement*, Preamble.

⁶⁰ A Willock and M Lack, *Follow the Leader: Learning from Experience and Best Practice in Regional Fisheries Management Organisations* (WWF International and TRAFFIC International, 2006) 3.

⁶¹ <http://www.iotc.org> (accessed 7 August 2010).

commitments to pursue specific objectives through participation in the IOTC is the FAO code of Conduct.

The IOTC area of competence includes the Western and Eastern Indian Ocean regions (FAO areas 51 and 57 respectively), as represented in Figure 5.⁶² This area covers the Indian Ocean and the adjacent seas, north of the Antarctic Convergence.⁶³

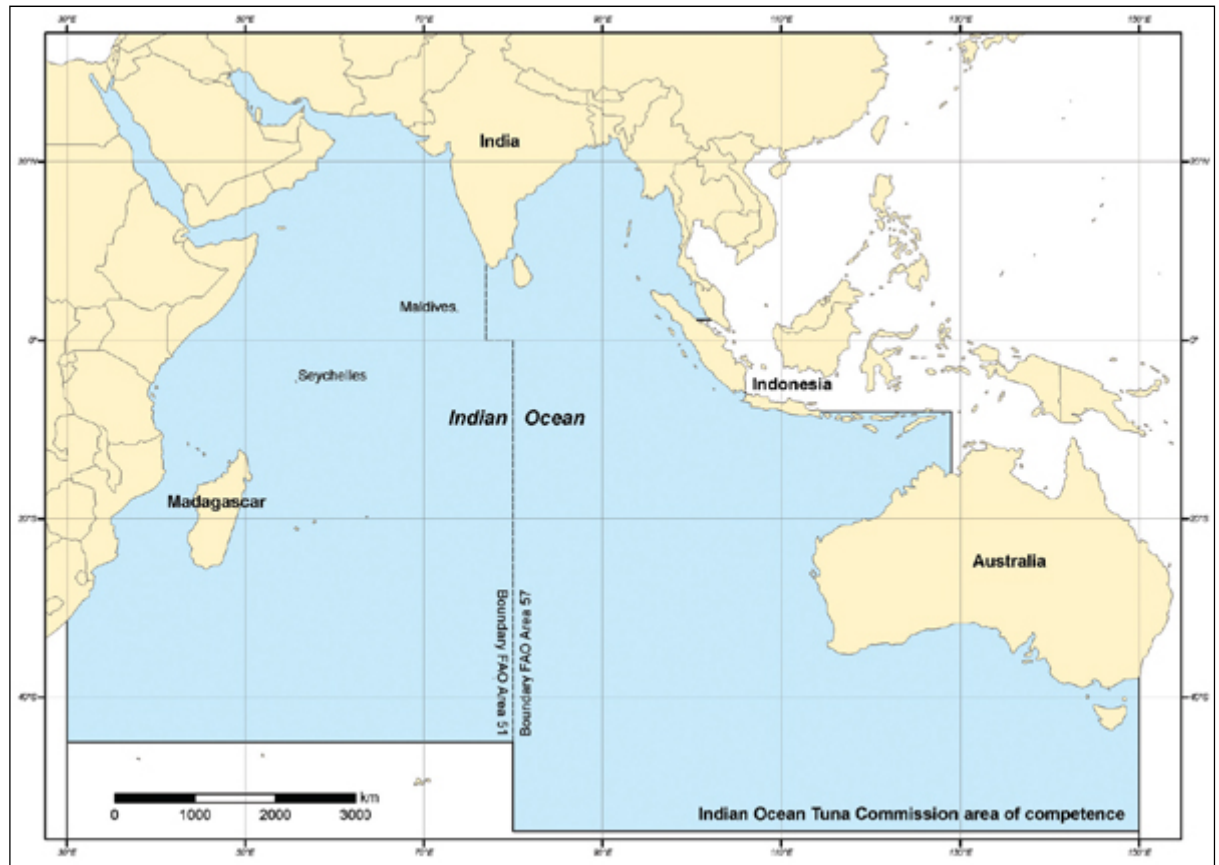


Figure 5. IOTC area of competence (FAO Areas 51 and 57)⁶⁴

Pursuant to Article V of the IOTC Agreement, the Commission has, *inter alia*, the following functions and responsibilities in accordance with the principles expressed in the relevant provisions of the LOSC:

a) To keep under review the conditions and trends of the stocks, and to gather, analyse, and disseminate scientific information, catch and effort statistics and other data

⁶² The FAO has established 27 major fishing areas for statistical purposes. These include inland and marine fishing areas. The marine fishing areas cover the waters of the Pacific, Atlantic, Indian and Southern Oceans with their adjacent seas. These areas are identified by the use of names and two-digit codes. <http://www.fao.org> (accessed 7 August 2010).

⁶³ Internet guide to International Fisheries Law- International Organisations Compendium, IOTC, <http://www.intfish.net/orgs/fisheries/iotc.htm>, (accessed on 7 August 2010).

⁶⁴ Source: http://www.daff.gov.au/.../indian_ocean_tuna_commission

relevant to the conservation and management of the stocks and to fisheries based on the stocks covered by the IOTC Agreement;

b) To encourage, recommend, and coordinate research and development activities in respect of the stocks and fisheries covered by this Agreement, and such other activities as the Commission may decide appropriate, including activities connected with transfer of technology, training and enhancement, having due regard to the need to ensure the equitable participation of Members of the Commission in the fisheries and the special interests and needs of Members in the region that are developing countries;

c) to adopt, in accordance with Article IX and on the basis of scientific evidence, conservation and management measures, to ensure the conservation of the stocks covered by the IOTC Agreement and to promote the objective of their optimum utilization throughout the Area, and;

(d) to keep under review the economic and social aspects of the fisheries based on the stocks covered by the IOTC Agreement bearing in mind, in particular, the interests of developing coastal states.

The species under the management mandate of IOTC are presented in Table 1.

Table 1. IOTC Species⁶⁵

| IOTC SPECIES |
|--|
| Tuna |
| Albacore tuna (<i>Thunnus alalunga</i>) |
| Bigeye tuna (<i>Thunnus obesus</i>) |
| Skipjack (<i>Katsuwonus pelamis</i>) |
| Southern bluefin tuna (<i>Thunnus maccoyii</i>) |
| Yellowfin tuna (<i>Thunnus albacares</i>) |
| Billfish |
| Black marlin (<i>Makaira indica</i>) |
| Indo-Pacific blue marlin (<i>Makaira mazara</i>) |
| Indo-Pacific sailfish (<i>Istiophorus platypterus</i>) |
| Striped marlin (<i>Tetrapturus audax</i>) |
| Swordfish (<i>Xiphias gladius</i>) |
| Neritic tuna |
| Bullet tuna (<i>Auxis rochei</i>) |
| Frigate tuna (<i>Auxis thazard</i>) |
| Indo-Pacific king mackerel (<i>Scomberomorus guttatus</i>) |
| Kawakawa (<i>Euthynnus affinis</i>) |
| Longtail tuna (<i>Thunnus tonggol</i>) |
| Narrow barred Spanish mackerel (<i>Scomberomorus commersoni</i>) |

⁶⁵ Adopted from The Report of the IOTC Performance Review Panel (2009) 14

3.4.1 Organisational Structure of the IOTC

An effective organisational structure is essential for the coordination of activities within the IOTC. Such a structure would contribute to the efficient functioning of the IOTC and also facilitate decision making regarding the adoption of appropriate measures for the governance of tuna stocks in IOTC's Area of competence. The administrative functions of the IOTC are carried out by the secretariat which is hosted in Victoria, Seychelles. The secretariat which manages the daily activities of the IOTC may also establish subsidiary bodies with specific functions.⁶⁶ Such subsidiary bodies include the scientific committee and the technical working parties. The Chairperson of the IOTC convenes its annual regular session.⁶⁷

3.4.1.1 Membership of the IOTC

The effectiveness of IOTC in achieving its objectives is dependent upon the active participation of coastal and fishing States in the Indian Ocean region. All Members and Associate Members of FAO are eligible to the membership of the Commission if they are; a) coastal States or Associate Members situated wholly or partly within the Area; b) States or Associate Members whose vessels engage in fishing in the Area for stocks covered by the IOTC Agreement; c) regional economic integration organizations of which any State referred to in a) or b) is a member and to which that State has transferred competence over matters within the purview of the IOTC Agreement.⁶⁸

In addition, the Commission may, by a two-thirds majority of its members, admit to membership any other States that are not Members of FAO, but are Members of the United Nations, or of any of its specialized Agencies, or of the International Atomic Energy Agency, provided that such States are; a) coastal States situated wholly or partly in the Area; or b) States whose vessels engage in fishing in the Area for stocks covered by the IOTC Agreement.⁶⁹ Thus, members of the IOTC are obliged to

⁶⁶ *IOTC Agreement*, Article XII; IOTC, Rules of procedure, Rule XII.

⁶⁷ *IOTC Agreement*, Article VI(4).

⁶⁸ *IOTC Agreement*, Article IV(1)(a)

⁶⁹ *IOTC Agreement*, Article IV(2)(a).

cooperate with each other and to encourage eligible States to become members of the Commission.⁷⁰

States wishing to become members of the IOTC are required to deposit an instrument with the Director-General of FAO accepting to be bound by the provisions of the Agreement.⁷¹ The Director-General in turn, is required to inform the IOTC and FAO Members, as well as the Secretary General of the United Nations of acceptances that have become effective.⁷² Pursuant to Article XXIV(c)(i) of the IOTC Agreement, the Director-General also informs each Member and Associate Member of FAO who have accepted the Agreement and non-Member States admitted to the IOTC of the application of a non-Member State to be admitted to membership in the IOTC. The current membership of IOTC is presented in Table 2.

⁷⁰ *IOTC Agreement*, Article IV(3).

⁷¹ *IOTC Agreement*, Article XVII (1)&(2).

⁷² *IOTC Agreement*, Article XVII (3).

Table 2. Current Members and Cooperating non-Contracting Parties of IOTC⁷³

| MEMBER | ACCESSION DATE |
|----------------------------|--------------------------|
| Australia | November 1996 |
| Belize | May 2007 |
| China | October 1998 |
| Comoros | August 2001 |
| Eritrea | August 1994 |
| European Community | October 1995 |
| France | December 1996 |
| Guinea | January 2005 |
| India | March 1995 |
| Indonesia | July 2007 |
| Iran, Islamic Republic | January 2002 |
| Japan | June 1996 |
| Kenya | September 2004 |
| Korea, Republic of | March 1996 |
| Madagascar | January 1996 |
| Malaysia | May 1998 |
| Mauritius | December 1994 |
| Oman, Sultanate of | April 2000 |
| Pakistan | April 1995 |
| Philippines | January 2004 |
| Seychelles | July 1995 |
| Sierra Leone | July 2008 |
| Sri Lanka | June 1994 |
| Sudan | December 1996 |
| Tanzania | April 2007 |
| Thailand | March 1997 |
| United Kingdom | March 1995 |
| Vanuatu | October 2002 |
| COOPERATING PARTIES | COOPERATING SINCE |
| Maldives | March 2010 |
| Senegal | May 2006 |
| South Africa | June 2005 |
| Uruguay | May 2007 |

The membership of IOTC is significant in giving effect to its capacity for governance. The IOTC Agreement provides the rules of procedure for membership application. As the FAO plays a central role in the admission of members to IOTC, it is necessary that the FAO is appraised on these procedures every now and then to ensure that only the members designated in the IOTC Agreement are admitted. For example, the Commission found that the FAO Depository overlooked the relevant membership

⁷³ Adopted from: Report of the IOTC Performance Review Panel (2009) 12: IOTC, *Report of the Fourteenth Session of the Indian Ocean Tuna Commission*, Busan, Korea, 1-5 March 2010.

requirements in the case of Sierra Leone. Regarding Sierra Leone's membership application to the IOTC, the requirement under Article XXIV(c)(i) of the IOTC Agreement was overlooked. Sierra Leone's instrument of accession was submitted and accepted by the depository in FAO in 2008. However, the IOTC Members had not been consulted concerning the eligibility of Sierra Leone as required pursuant to Article XXIV of the IOTC Agreement. The IOTC therefore considered unprocedural, the decision by the FAO to admit Sierra Leone into Membership based on the requirements of the IOTC Agreement. The decision by the FAO also overlooked the requirement under the IOTC Agreement for the necessary two-thirds majority vote of the IOTC members as stipulated in Article IV(2).

Indeed, the FAO was working on the presumption that the right procedure had been followed; first, by assessing if the document submitted by Sierra Leone was legally acceptable, and secondly, by assessing Sierra Leone's eligibility for membership. Yet, according to the IOTC Members, Sierra Leone did not meet the relevant criteria as stipulated in Article IV of the IOTC Agreement.⁷⁴ In particular, the IOTC Members pointed out that, Sierra Leone is neither a coastal State in the IOTC area, nor has it recently reported fishing activity in the IOTC area.⁷⁵ In this case, the depository in FAO failed to follow the right procedure, and although one of the criteria for the acceptance of Sierra Leone's membership was eligibility, the legal requirements of the IOTC Agreement regarding eligibility were not met.

The Commission has since submitted a request to FAO for further investigation into the procedures employed in verifying the eligibility criteria in this case. The IOTC Members also stressed that the appropriate consultation be made in future, prior to any acceptances by the depository at FAO, and especially in situations similar to the Sierra Leone case where the State was not at all eligible for membership in accordance with the IOTC Agreement.⁷⁶

⁷⁴ IOTC, *Report of the Thirteenth Session of the Indian Ocean Tuna Commission*, Bali, Indonesia, 30 March-3 April 2009. para 64.

⁷⁵ Ibid.

⁷⁶ IOTC, *Report of the Thirteenth Session of the Indian Ocean tuna Commission*, Bali, Indonesia, 30 March-3 April 2009. para 66.

3.4.1.2 Participation Criteria

As was noted in section 3.4.1.1, the membership of IOTC is limited to Members and Associate Members of the FAO. Such membership restriction contradicts the provisions of the UN Fish Stocks Agreement which promote open membership to States with ‘a real interest’ in tuna stocks under the purview of the IOTC, and also the obligation for States and fishing entities to cooperate fully with the relevant RFMOs.⁷⁷ The cooperation of all States and fishing entities with fishing vessels operating in IOTC’s area of competence is fundamental to the effective conservation and management of tuna stocks in the Indian Ocean.

Regarding non-members, the IOTC has resolved to invite Non-Contracting Parties to participate in its work.⁷⁸ Non-contracting Parties can thus apply to the secretary of the IOTC to become Contracting Parties or attain the Status of Cooperating Non-Contracting Parties.⁷⁹ This is consistent with the provision of Article 17(3) of the UN Fish Stocks Agreement. Further, non-members who are Members or Associate Members of the FAO are admitted to Commission meetings as observers upon request.⁸⁰ The IOTC does not however provide for cooperation with fishing entities as required under Article 1(3) of the UN Fish Stocks Agreement.⁸¹ This omission in IOTC’s provisions prevents Taiwan which is considered as an entity from becoming a member of the Commission. As Taiwan is a major fishing nation in the Indian Ocean, its participation in the conservation and management of tuna stocks in the region is significant.

3.4.1.2.1 Participation of Fishing Entities

The term ‘fishing entity’ first appeared in an international legal instrument when the UN Fish Stocks Agreement was adopted.⁸² Article 1(3) of the UN Fish Stocks

⁷⁷ *UN Fish Stocks Agreement*, Articles 8-17.

⁷⁸ IOTC, *Resolution 98/05 on Cooperation with Non-Contracting Parties*.

⁷⁹ IOTC, *Resolution 03/02 on Criteria of Attaining the Status of Cooperating non-Cooperating Party*.

⁸⁰ The *IOTC Agreement*, Article VII; IOTC, *Rules of Procedure of IOTC*, Rule XIII(2)&(3).

⁸¹ Article 1(3) of the *UN Fish Stocks Agreement* states that; this Agreement applies mutatis mutandis to other fishing entities whose vessels fish on the high seas.

⁸² Peter S C Ho, ‘The Impact of the UN Fish Stocks Agreement on Taiwan’s Participation in International Fisheries Fora’ (2006) 37(2) *Ocean Development & International Law* 133, 133. Other International instruments which have made provisions for the participation of fishing entities include; the FAO Code of Conduct for Responsible Fisheries of 1995, Article 1.2 and 4.1. and the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU), Article 5. The

Agreement provides that; the Agreement applies *mutatis mutandis* to other fishing entities whose vessels fish on the high seas. As Taiwan is the only fishing entity, it is believed that this provision was intended for Taiwan's integration into the international regulatory system of fisheries governance,⁸³ thus making vessels flying the Taiwanese flag subject to regional management and regulations,⁸⁴ through participation in RFMOs. However, the status of Taiwan limits its participation in the international management of high seas fish stocks.⁸⁵

As a Republic of China, Taiwan has limited international recognition and has been excluded from most global and regional fishery instruments dealing with high seas fisheries.⁸⁶ Taiwan's participation in global and regional agreements for international management of high seas fish stocks is equally limited. Since the IOTC has not established an effective mechanism for the participation of fishing entities, its membership restriction has prevented Taiwan, as a fishing entity from becoming a member of the Commission,

Taiwan is one of the world's leading DWFNs, and its tuna fishery is the most important distant water fishery.⁸⁷ Taiwan's purse seine fleet of 34 vessels is the second largest in the world after Japan.⁸⁸ Taiwan is a major fishing State in the Indian Ocean,

term had appeared earlier in FAO documents such as the FAO Fisheries Report No. 484, *Supplement, Papers Presented at the Technical Consultation on High Seas Fishing*, Rome 7-15 September 1992 (52) <http://books.google.com.au> (accessed 10 August 2010).

⁸³ Michael Sheng-Ti Gau, 'The Practice of the Concept of Fishing Entities: Dispute Settlement Mechanisms' (2006) 37(2) *Ocean Development & International Law* 221, 222; See also, Francisco Orrego Vicuna, *The Changing International Law of High Seas Fisheries* (1999) 212; Martin Tsamenyi, 'The Legal Substance and Status of Fishing Entities in International Law: A Note' (2006) 37(2) *Ocean Development & International Law* 123, 123.

⁸⁴ Hasjim Djalal, 'The Emergence of the Concept of Fishing Entities: A Note' (2006) 37(2) *Ocean Development and International Law* 117, 118.

⁸⁵ Ibid. China claims sovereignty over the Island of Taiwan (hence, the term 'Chinese Taipei'). As a result, some States argue that as part of China, Taiwan is under the principle of the 'one China policy', and may not be regarded as a fully sovereign State. However Taiwan has been admitted by some international organisations like the World Trade Organisation (WTO) as an 'entity'. In which case, Taiwan is looked upon as a subject in international law with the legal capacity to participate in decision making.

⁸⁶ Michael W Lodge, 'The Practice of Fishing Entities in the Regional Fisheries Management Organisations: The Case of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean' (2006) 37(2) *Ocean Development & International Law* 185, 187.

⁸⁷ Peter S C Ho, 'The Impact of the UN Fish Stocks Agreement on Taiwan's Participation in International Fora' (2006) 37(2) *Ocean Development & International Law* 133, 140; Marcus Haward and Anthony Bergin, 'Taiwan's Distant Water Tuna Fisheries' (2000) 24(1) *Marine Policy* 33, 42.

⁸⁸ The China Post, <http://www.chinapost.com.tw/life/environment/2009/08/26/222027/Greenpeace-EAST.htm> (accessed 17 December 2009).

having started tuna longline fishing in 1963,⁸⁹ with a longline fleet that is currently catching about 30% of the total bigeye catch.⁹⁰ Taiwan had a total of 640 longliners and a catch of 27,000tonnes in 2008.⁹¹ Between 2004 and 2008, the annual catch for longliners was 95,000tonnes.⁹² Although Taiwan's tuna catches in the Indian Ocean are quite substantial,⁹³ Taiwan can neither discharge its obligation to cooperate, nor can IOTC address issues related to non-cooperation or non-compliance of fishing entities.⁹⁴ Considering Taiwan's substantial fishing activity in the Indian Ocean, it's participation in the work of IOTC is fundamental to the effective conservation and management of tuna stocks in the region. It is necessary for the IOTC to make it a priority to address the issue of Taiwan's participation in the Indian Ocean fishery.

Taiwan can be understood as being an entity possessing full autonomy in the conduct of its external fisheries relations and of matters provided for in relevant international law.⁹⁵ With this viewpoint, Taiwan has pursued contracting party status in RFMOs. Pursuant to Article 17(3) of the UN Fish Stocks Agreement, the burden is upon States which are members of RFMOs to request fishing entities which have fishing vessels in the relevant area to cooperate fully in the implementation of the established conservation and management measures. Such entities shall enjoy benefits from participation in the fishery commensurate with their commitment to comply with these measures.⁹⁶ Consequently, Taiwan can enjoy the benefits of harvesting tuna if its vessels comply with the measures adopted by RFMOs such as the IOTC.

⁸⁹ C C Hsu and H C Liu, 'Taiwanese longline and gillnet fisheries in the Indian Ocean', in FAO, *Proceedings of the second FAO Expert Consultation on the interactions of Pacific tuna fisheries*, Shimizu, Japan 23-31 January 1995.

⁹⁰ IOTC, *Report of the Twelfth Session of the Scientific Committee*, Victoria Seychelles, 30 November -4 December 2009.

⁹¹ Ibid.

⁹² Ibid.

⁹³ Peter S C Ho, 'The Impact of the U.N. Fish Stocks Agreement on Taiwan's Participation in International Fora' (2006) 37(2) *Ocean Development & International Law* 133, 142. Taiwan has the highest tuna catches in the Indian Ocean with over 300 fishing vessels in operation.

⁹⁴ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009) 17.

⁹⁵ Nien-Tsu Alfred Hu, 'Fishing Entities: Their Emergence, Evolution, and Practice from Taiwan's Perspective' (2006) *Ocean Development & International Law* 149-157.

⁹⁶ *UN Fish Stocks Agreement*, Article 17 (3).

Currently, Taiwan is represented at the IOTC meetings by “invited experts” who are ranked as observers.⁹⁷ This status does not allow such experts to represent their country or make any commitments on the implementation of management measures under consideration by the IOTC.⁹⁸ Although there have been claims of laundering activities by Taiwan over the years,⁹⁹ the IOTC has fallen short of taking measures to sanction Taiwan over practices which undermine its efforts in meeting its conservation objectives, and it does not also have the mechanism to obligate Taiwan to submit statistical data as required.

For vessels flying Taiwan’s flag to comply with measures adopted by the IOTC, it must participate in decision making regarding the tuna fisheries in the Indian Ocean. Taiwan’s tuna fishery is the most important of all its fisheries, with the distant water fishery being the major sector in the fishing industry.¹⁰⁰ As such, Taiwan can be considered as a State that has ‘real interest’ in the tuna fisheries of the Indian Ocean as stipulated in Article 8(3) of the UN Fish Stocks Agreement.

3.4.1.2.2 Practice of RFMOs Regarding Entities

Because of the importance of Taiwan’s tuna fishery, Taiwan is exercising great efforts in the international conservation of management of tuna fisheries.¹⁰¹ In this respect, Taiwan has established domestic regulations in line with the resolutions adopted by RFMOs, and has also implemented a fleet size reduction programme.¹⁰² Recognising the role of Taiwan in tuna fisheries, some RFMOs have adopted approaches to address the issues of Taiwan’s participation in their tuna fisheries.

⁹⁷ IOTC, *Report of the Ninth Session of the Indian Ocean Tuna Commission*, Victoria, Seychelles, 30 May- 3 June 2005; William Edeson, ‘Some Future Directions for Fishing Entities in Certain Regional Fisheries Management Bodies’ (2006)37 *Ocean Development & International Law* 245, 254.

⁹⁸ Peter, S C Ho, ‘The Impact of the U.N. Fish Stocks Agreement on Taiwan’s Participation in International Fora’ (2006) 37(2) *Ocean development & International Law* 133, 141.

⁹⁹ IOTC, *Report of the Ninth Session of the Indian Ocean Tuna Commission*, Victoria Seychelles, 30 May-3 June 2005.

¹⁰⁰ Marcus Haward and Anthony Bergin, ‘Taiwan’s Distant Water Tuna Fisheries’ (2000)24 *Marine Policy* 33, 33.

¹⁰¹ Shui-Kai Chang, Kun-yu Liu and Yann-Huei Song, ‘Distant Water Fisheries Development and Vessel Monitoring System Implementation in Taiwan- History and Driving Forces’ (2010) 34 *Marine Policy* 541, 546.

¹⁰² IOTC, *Report of the Twelfth of the Scientific Committee*, Victoria Seychelles, 30 November -4 December 2009. In the Indian Ocean Taiwan reduced fishing effort in the tuna fishery by 70% between 2005 and 2007. This was mainly to reduce pressure on the bigeye stocks.

Taiwan's status notwithstanding, the need for its participation has been recognised by some RFMOs which have established appropriate mechanisms through the enabling implementation of the UN Fish Stocks Agreement. Recognising the considerable fishing activities of Taiwan in the South Pacific, States from the Western and Central Pacific Ocean have incorporated an instrument in the provisions of the WCPF Convention that enabled Taiwan to implement the Convention.¹⁰³ Taiwan was fully involved in the deliberations of the preparatory conference to establish the Commission, and signed the 'Arrangement for the Participation of Fishing Entities' to enable its involvement and implementation of the WCPF Convention.¹⁰⁴ This incident set a legal precedent and catalysed the participation of Taiwan in other RFMOs.¹⁰⁵ Other RFMOs in whose work Taiwan is participating are CCSBT, ICCAT and IATTC.¹⁰⁶

3.4.1.3 The Scientific Committee

The IOTC is obliged to establish a permanent Scientific Committee which provides scientific advice on the status of the tuna stocks under its purview.¹⁰⁷ In addition, sub-commissions may be established to deal with specific tuna stocks,¹⁰⁸ as well as working parties which analyse the technical problems related to the management goals of the IOTC.¹⁰⁹ The Committee comprises scientists who are representatives from member States and invited experts.¹¹⁰ The committee provides advice to the IOTC and sub-commissions on research and data collection, status of stocks and management

¹⁰³ See, WCPFC Convention, Annex 1(1) available at <http://www.wcpfc.int/> (accessed 12 August 2010); Peter S C Ho, 'The Impact of the U.N. Fish Stocks Agreement on Taiwan's Participation in International Fora' (2006) 37(2) *Ocean Development & International Law* 133, 139.

¹⁰⁴ Hasjim Djalal (2006), 'The Emergence of the Concept of Fishing Entities: A Note' (2006) 37(2) *Ocean Development & International Law* 117, 120; Peter S C Ho, 'The impact of the UN Fish Stocks Agreement on Taiwan's participation in international fisheries Fora' (2006) 37 *Ocean Development & International Law* 133, 136; The text of the Chinese Taipei Arrangement can be found at <http://www.wcpfc.int/doc/arrangement-participation-fishing-entities>.

¹⁰⁵ Peter S C Ho, 'The impact of the UN Fish Stocks Agreement on Taiwan's participation in international fisheries Fora' (2006) 37 *Ocean Development & International Law*, 133, 140.

¹⁰⁶ Michael Sheng-Ti Gau, 'The Practice of the Concept of Fishing Entities: Dispute Settlement Mechanisms' (2006) 37(2) *Ocean Development & International Law* 221, 222.

¹⁰⁷ *IOTC Agreement*, Article XII (1).

¹⁰⁸ *IOTC Agreement*, Article XII (2) and (4).

¹⁰⁹ *IOTC Agreement*, Article XII (5).

¹¹⁰ *IOTC Rules of Procedure*, Rule X (3) and (4).

matters.^{111,112} The chairperson, who is elected by the Scientific Committee,¹¹³ may convene working parties to carry out stock assessments of the relevant species and advise the Committee accordingly.¹¹⁴

Although the IOTC Agreement does not list the duties of the Scientific Committee, these duties are stipulated in Rule X(10) of IOTC's Rules of Procedure. These functions include, *inter alia*, recommending policies and procedures for the collection, processing, dissemination and analysis of fisheries data;¹¹⁵ develop and coordinate research in collaboration with members of the Commission in support of fisheries management;¹¹⁶ keeping the Commission informed on the status of the relevant stocks and offering management advice to the Commission and sub-commissions accordingly,¹¹⁷ and assisting in the exchange and review of research information among scientists.¹¹⁸ The Scientific Committee holds annual meetings to analyse the reports of IOTC member States and Cooperating Non-Contracting Parties, with respect to their tuna fisheries, statistical systems and research programmes, as well as the measures that they may have adopted in response to the recommendations from the Committee.¹¹⁹ Sub-commissions on the other hand, have a duty to review the relevant stocks and recommend the appropriate management measures to the Commission.¹²⁰ A review of the IOTC in 2009, recommended that detailed provisions for these bodies should be included in the IOTC Agreement as well as being stipulated in the Rules of Procedure.¹²¹

To date, the Commission has established five working parties related to the different species. The active working parties include ecosystems and bycatch (WPEB), tropical tunas (WPTT), billfish (WPB), fishing capacity (WPFC), and data collection

¹¹¹ <http://www.iotc.org> (accessed 11 August 2010).

¹¹² WCPFC has taken a different approach by engaging scientific experts to provide data and advice to the scientific committee.

¹¹³ IOTC, *Rules of Procedure*, Rule X(6).

¹¹⁴ IOTC, *Rules of Procedure*, Rule X (12).

¹¹⁵ IOTC, *Rules of Procedure*, Rule X (10) (a).

¹¹⁶ IOTC, *Rules of Procedure*, Rule X (10) (c).

¹¹⁷ IOTC, *Rules of Procedure*, Rule X (10) (d) and (e).

¹¹⁸ IOTC, *Rules of Procedure*, Rule X (10) (b).

¹¹⁹ <http://www.iotc.org>. (Accessed 11 August 2010).

¹²⁰ IOTC, *Rules of Procedure*, Rule XI (3)(a) &(c).

¹²¹ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009).

and statistics (WPDCS).¹²² These parties develop models, identify procedures for stock assessment, review the stock structures and carry out stock assessments of the relevant tuna species.¹²³ The results from the working parties are directed to the scientific Committee for management recommendations to the Commission.

3.4.2 Decision-Making Structure of the IOTC

According to the IOTC Agreement, decisions and recommendations are taken by a majority vote.¹²⁴ The IOTC has established different decision-making procedures for various types of decisions. First, are the Conservation and Management measures, which are binding on Members and are to be adopted by a two-thirds majority.¹²⁵ The two-thirds majority rule also applies to the Rules of Procedure which the Commission may adopt and amend.¹²⁶ Second, decisions are passed in the form of *Resolutions* that are binding on Commission Members, unless there is specific objection on the part of the Members or *Recommendations* which are non-binding and rely on the voluntary action of Members.¹²⁷ Third, the Commission is required to adopt its budget by consensus, although a two-thirds majority rule will apply if a consensus is not reached.¹²⁸ Fourth, to amend the IOTC Agreement a three-quarters majority is required.¹²⁹

The IOTC Agreement contains an objection procedure which enables members to object to the conservation and management measures adopted by the Commission within a specified period, and even opt out of any of these measures with no justification whatsoever.¹³⁰ Such a procedure is considered outdated, and one which is likely to impair the Commission's implementation and compliance mechanisms.¹³¹

¹²² IOTC, *Report of the Twelfth Session of the Scientific Committee* Victoria, Seychelles, 30 November- 4 December 2009.

¹²³ <http://www.iotc.org> (accessed 11 August 2010).

¹²⁴ *IOTC Agreement*, Article VI(2).

¹²⁵ *IOTC Agreement*, Article IX (1).

¹²⁶ *IOTC Agreement*, Article VI (3).

¹²⁷ <http://www.iotc.org> (accessed 5 February 2011).

¹²⁸ *IOTC Agreement*, Article XIII (2) and (3).

¹²⁹ *IOTC Agreement*, Article VI XX (1).

¹³⁰ *IOTC Agreement*, Article IX (5).

¹³¹ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009) 18. Other RFMOs such as IATTC avoid the occurrence of such objections by taking all decisions and resolutions by members' unanimous approval. See Judith Swan, *Decision- Making in Regional Fishery Bodies or Arrangements:*

It is imperative that for the conservation and management measures of IOTC to be effective, its members ought to be willing to cooperate by implementing at national level, the decisions taken by the Commission and by discharging their international obligations as stipulated in international instruments.

3.4.3 Administration and Finance

The Secretary of the IOTC is appointed by the FAO Director- General, with the approval of the Commission in accordance with Article VIII of the IOTC Agreement. Although the staff of the Commission are appointed by the Secretary and are under the Secretary's supervision, both the Secretary and the staff are appointed under the terms and conditions of the FAO, and they are responsible to the Director-General, for administrative purposes.¹³²

The budget of the IOTC is not fully under the control of its members and the Secretariat. As an FAO Commission, the financial regulations of IOTC must conform to those of the FAO. Consequently, the FAO controls the manner in which the Commission's budget is discharged. A budget prepared by the Director-General is approved by the Conference of FAO in accordance with the Rules and Financial Regulations of FAO.¹³³ The administrative budget expenses of the Commission are derived from Members' contributions which are made to an autonomous budget adopted during its normal sessions annually.¹³⁴ The Commission determines the level of members' contributions based on their economic status and their ability to make financial contributions. The contributions are determined according to the members' Gross National Income as assessed by the World Bank.¹³⁵ In 2007 the World Bank classified countries as low income if the per capita Gross National Income was less than

The Evolving Role of RFBs and International Agreement on Decision-Making Processes. FAO Fisheries Circular No. 995 (FAO, 2004),

¹³² *IOTC Agreement*, Article VIII (1).

¹³³ *IOTC Agreement*, Article VIII (3).

¹³⁴ *IOTC Agreement*, Article XIII (1), (3) and (4); IOTC Financial Regulations, Regulation III (4).

¹³⁵ According to the OECD Glossary, the GNI comprises the total value produced within a country (Gross Domestic Product), less primary incomes payable to the non-resident units plus primary incomes receivable from non-resident units. <http://stats.oecd.org/glossary/search.asp> (accessed 31 August 2010).

US\$935; as high income if it was higher than US\$11,455 and as middle income those countries with per capita GNI between US\$935 and US\$11,455.¹³⁶

The IOTC may also receive donations from willing donors for the fulfilment of its functions.¹³⁷ Altogether the contributions and donations to the Commission are held in a Trust which is administered by the Director-General of FAO.¹³⁸ The FAO charges organisation costs at 4.5% of the Commission's total budget.¹³⁹ For example, from the total expenditure of US\$1,737,373 in 2009, the FAO servicing costs were US\$78,564, while a total of US\$82,493 is projected in service fees to FAO for a budget of US\$1,824,667.¹⁴⁰

In accordance with Article XIII (8) of the IOTC Agreement, the members' right to vote is determined by the status of their contribution. According to the Secretariat, Members of the Commission are often in arrears in the payment of their financial contributions.¹⁴¹ As a result, such members may lose their right to vote as provided in Article XIII(8) the IOTC Agreement. Accordingly, a Member which is in arrears in the payment of its financial contributions shall not be eligible to vote if its arrears equals or exceeds the amount of contributions due from it for the two preceding calendar years. However, the Commission may allow such a Member to vote if it is satisfied that the failure to pay was due to conditions beyond the control of the Member. It is imperative that failure by Members to remit their financial contributions to the Commission in a timely manner impairs its decision making process and ultimately hinders the Commission from fulfilling its mandate. Delays in Members' annual contributions may be attributed to the fact that most of the States in the IOTC area of competence are developing coastal States, which are faced with financial constraints.

A great majority of the IOTC Members are opposed to the current budgetary arrangements between the Commission and the FAO. The European Commission (EC),

¹³⁶ IOTC, *Report of the Fourteenth Session of the Indian Ocean tuna Commission*, Busan, Korea, 1-5 March 2010.

¹³⁷ *IOTC Agreement*, Article XIII (6).

¹³⁸ *IOTC Agreement*, Article XIII (7).

¹³⁹ IOTC Financial Regulations, Regulation III (5).

¹⁴⁰ IOTC, *Report of the Twelfth Session of the Indian Ocean tuna Commission*, Bali, Indonesia, 30 March-3 April 2009.

¹⁴¹ IOTC, *Report of the Tenth Session of the Indian Ocean Tuna Commission*, Goa-Indian, 22-26 May 2006; IOTC, *Report of the Ninth Session of the Indian Ocean Tuna Commission*, Victoria, Seychelles, 30 May- 3 June 2005.

for example has expressed its concerns regarding the lack of transparency and accountability to the Commission's budget of 2006 and accounts of 2005.¹⁴² In response to these concerns, the IOTC standing committee on administration and finance recommended that regular external financial audits of the secretariat be carried out to enhance the accountability and transparency in IOTC's financial affairs.¹⁴³ Additionally, the results of the IOTC performance review indicated that IOTC's budgetary relationship to FAO is detrimental to the efficiency of the Commission's work, since neither members nor the secretariat are in full control of the budget.¹⁴⁴ Although FAO is required to contribute to the budget of the IOTC in accordance with Article VIII(3) of the IOTC Agreement, such contributions have not been forthcoming. The general recommendation of the Review panel in this respect and from a legal standpoint is that the IOTC Agreement be amended accordingly.¹⁴⁵

3.4.4 The IOTC and FAO Framework

The IOTC has initiated a process that will enable the Commission to review its association with FAO in accordance with Article XX of the IOTC Agreement, in order to meet its challenges concerning fishing entities, and finance and administration. To a great extent, the review has been prompted by the demand for a performance review of RFMOs by the international community to assess their effectiveness and efficiency in delivering their mandate. It has been suggested that an amendment to the IOTC Agreement will enable IOTC to be placed outside the framework of FAO and modernise the Commission, thus enabling Taiwan to participate in the work of the Commission. In this respect, there was consensus that the texts of the IOTC agreement and the rules of procedure be amended accordingly. The IOTC recognises the contribution of FAO in its operations especially in its formative years and has

¹⁴² The EC representative proposed a change in the institutional framework of IOTC as the only solution to this anomaly. See, IOTC, *Report of the meeting of the Tenth Session of the Indian Ocean Tuna Commission*, Goa-Indian, 22-26 May 2006; IOTC, *Report of the Ninth Session of the Indian Ocean Tuna Commission*, Victoria, Seychelles, 30 May- 3 June 2005.

¹⁴³ IOTC, *Report of the Tenth Session of the Indian Ocean Tuna Commission*, Goa-Indian, 22-26 May 2006; IOTC, *Report of the Ninth Session of the Indian Ocean Tuna Commission*, Victoria, Seychelles, 30 May- 3 June 2005.

¹⁴⁴ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009) 14.

¹⁴⁵ Ibid.

established a cooperation agreement to maintain a strong relationship between IOTC and FAO.¹⁴⁶

3.5 Conclusion

This chapter has reviewed the regional institutional framework for tuna management in the Indian Ocean by examining the governance framework. An examination of the provisions of the IOTC Agreement has shown that some relevant aspects of international fisheries law which could be translated into management strategies have been omitted from the IOTC Agreement. For example, the modern elements of fisheries management such as the precautionary and ecosystem-based approaches are not addressed. Most of the provisions of the LOSC and UN Fish Stocks Agreement including MCS measures are also not reflected. These anomalies impede the effectiveness and efficiency of the IOTC. The objection procedure in IOTC's decision making structure is also seen as an impediment to its implementation and compliance mechanisms.

It has also been shown that the limitation on participation to the IOTC has prevented Taiwan which is a major fishing State from participating in the work of the Commission. Taiwan is also prevented from cooperating with other fishing and coastal States through the IOTC, making it difficult for the IOTC to take measures to sanction Taiwan over practices which undermine its efforts in meeting its conservation objectives, and it does not also to obligate Taiwan to submit statistical data as required.

¹⁴⁶ A complete analysis of the status of the IOTC within the framework of FAO is beyond the scope of the present thesis. For further reading, See IOTC, *Report of the Ninth Session*, Victoria, Seychelles, 30 May-3 June 2005; IOTC, *Report of the Third Special Session of the Commission*, Goa, India, 17-19 May 2006; FAO, *Eighty-first Session of CCLM*, Rome, 4-5 April 2007; William Edeson, 'An International Legal Extravaganza in the Indian Ocean: Placing the Indian Ocean Tuna Commission outside the Framework of FAO' (2007) 22(4) *The International Journal of Marine and Coastal Law* 485, 450; William Edeson, 'Article XIV and the FAO Constitution, International legal personality and the Indian Ocean tuna Commission', in Tafsir Malick Ndiaye and Rüdiger Wolfrum (eds.), *Law of the Sea, environmental and settlement of disputes: Liber amicorum Judge Thomas A. Mensah* (Martinus Nijhoff Publishers, 2007) 735; William Edeson, 'Some Future Direction for Fishing Entities in Certain Regional Fisheries Management Bodies' (2006) 37(2), *Ocean Development & International Law* 245, 253.

CHAPTER 4

CONSERVATION AND MANAGEMENT MEASURES

ADOPTED BY THE IOTC

4.1 Introduction

The Indian Ocean Tuna Commission has a key role to play in the long-term sustainability of tuna stocks in the Indian Ocean. The IOTC in consultation with its Members has a responsibility of conserving and managing the tuna stocks under its purview. Thus, the IOTC is required to adopt the appropriate conservation and management measures consistent with international law.

In this chapter, the conservation and management measures adopted by the IOTC for the management of the Indian Ocean tuna resources are analysed and assessed in order to determine their consistency with the international fisheries instruments discussed in chapter 2. The role of the IOTC in enhancing regional cooperation and regulating the utilisation of tuna resources in the Indian Ocean is also examined. The internationally agreed measures in the framework of the IOTC provide the necessary context for analysing Kenya's implementation of its international and regional obligations relating to tuna in chapter 6.

4.2 Conservation and Management Measures

The adoption of conservation and management measures is central to the work of the IOTC. A requirement of the UN Fish Stocks Agreement is for States to cooperate through RFMOs in adopting measures that ensure the long-term sustainability of tuna stocks and promote the objective of their optimum utilization.¹ States are also required to agree on and comply with such measures.² The adoption of such measures is facilitated through the decision-making procedures of the IOTC. The effectiveness of these measures is reliant upon the commitment of Members to address issues that are critical to the sustainability of tuna resources under the management mandate of the IOTC. Such decisions also ought to have a sound basis. Accordingly, Article 10(j) of the UN Fish Stocks Agreement obligates States, through RFMOs to agree on decision-making procedures which facilitate the adoption of conservation and management measures in a timely and effective manner.

¹ *UN Fish Stocks Agreement*, Art. 5(a).

² *UN Fish Stocks Agreement*, Art. 10(a).

The conservation and management measures of the tuna stocks under the auspices of the IOTC are embodied in the *Resolutions* and *Recommendations* which are adopted at the Commission's annual sessions.³ As discussed in the previous chapter (3.4.2), the resolutions of the IOTC are binding on members, while the IOTC recommendations are voluntary. To date, the IOTC has adopted forty-six *Resolutions* and eleven *Recommendations*. The resolutions adopted by the IOTC address various aspects of tuna fisheries management including the approaches to conservation of target species and non-target species, data contribution and sharing, and compliance and enforcement.

Although the IOTC Agreement does not stipulate the conservation principles for fisheries management to be adopted by members of the IOTC, it acknowledges the requirement for members to promote the optimum utilisation and sustainable development of tuna stocks under the purview of the IOTC.⁴ Additionally, Article V(2)(c) of the IOTC Agreement reiterates this requirement and obliges the Commission to adopt conservation and management measures in accordance with Article IX and on the basis of scientific advice. These requirements are consistent with the provisions of the LOSC⁵ and the UN fish Stocks Agreement.⁶ The procedures concerning conservation and management measures are stipulated in Article IX of the IOTC Agreement.

4.2.1 Approaches to Species Management

The principal market tuna species under the purview of the IOTC are bigeye tuna, skipjack tuna, yellowfin tuna, Albacore, and swordfish. The tuna fishery in the Indian Ocean harvests not only these target species, but also impacts other species which are not targeted or wanted. As was noted in chapter 2(2.5.2) such species which are referred to as non-target species may include, *inter alia*, fish, sharks, sea turtles and

³ In contrast to the IOTC, the WCPFC has adopted a different practice with respect to the nomenclature for its decisions. Unlike IOTC, the resolutions of WCPFC are non-binding to its members and cooperating non-members, while its conservation and management measures are binding. See <http://www.wcpfc.int/conservation-and-management-measures> (accessed 2 January 2010).

⁴ The *IOTC Agreement*, Preamble; Article V (1) & (2)(c).

⁵ *LOSC*, Arts. 61 (2), 62(1), 64(1).

⁶ *UN Fish Stocks Agreement*, Art. 5(a) and (b).

birds, taken up as by-products which may be retained for their market value or by-catch which may eventually be discarded.

The LOSC and the UN Fish Stocks Agreement provide the need for States cooperating through RFMOs not only to establish conservation measures for tuna fisheries but also to take into consideration the effects on species associated with or dependent upon harvested species, with a view to maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened.⁷ The UN Fish Stocks Agreement broadens the focus further to include the tuna fishery ecosystem⁸ and emphasises the need for a precautionary approach to the management of the fishery.⁹ An analysis of the conservation of target and non-target species follows.

4.2.1.1 Status of Target Species

The target species of concern to the present thesis are Skipjack, bigeye and yellowfin tunas. Bigeye in the Indian Ocean is caught by industrial longline and purse seine fleets, with Taiwanese vessels being the major longline fleet.¹⁰ As the stock size and fishing pressure are close to the optimal, the current assessment of the Indian Ocean stock of bigeye tuna undertaken by the scientific committee concludes that the bigeye stock is fully utilised.¹¹ The scientific committee has registered its concerns about the relative decrease in adult bigeye, considering the gradual decline of the stock size indicators since the 1970s. The results of the stock assessment conducted in 2009, indicate that the current (2008) exploitation levels of bigeye (107,000tonnes) are below the current estimate of MSY (110,000tonnes), and that the catches of bigeye should not exceed this level.¹² On the basis of scientific advice, the IOTC has committed to seek to

⁷ LOSC, Arts. 61(4) and 119(1)(b); *UN Fish Stocks Agreement*, Arts. 5(e) and 6(3)(c).

⁸ *UN Fish Stocks Agreement*, Arts. 5 and 7.

⁹ *UN Fish Stocks Agreement*, 5(c) and 6.

¹⁰ IOTC, *Report of the Ninth Session of the Scientific Committee*, Victoria, Seychelles, 6-10 November 2006. The piracy acts off Somalia have greatly reduced the catches associated with FADS. See, *Report of the Twelfth Session of the Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009.

¹¹ IOTC, *Report of the Twelfth Session of the Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009.

¹² *Ibid.*

adopt appropriate measures to address the recommendations of the scientific committee in respect to the conservation of bigeye.¹³

Skipjack is known to be highly productive and resilient and is not prone to overfishing. However, the scientific advice is that, the stock should be closely monitored in 2010.¹⁴ The stocks size and fishing pressure is therefore considered to be within acceptable limits. Skipjack is caught by purse seine. Concerning yellowfin tuna, the stock is considered to have been recently overexploited and is subject to continuous overfishing.¹⁵ In the period 2003-2006, the catches of yellowfin tuna were extraordinarily high.¹⁶ This phenomenon has been attributed to an increase in catchability by surface fleets due to a high level of concentration across a reduced area and depth range.¹⁷ Although the assessment of the yellowfin tuna stock in the Indian Ocean remains complex and the stock status uncertain,¹⁸ these high catches are believed to have accelerated the decline in stock biomass.¹⁹

Yellowfin is caught by purse seine and longlines. The fishing mortality of yellowfin has been exceeding the MSY-related level (current MSY level is 300,000tonnes) and the recruitment is declining.²⁰ It is believed that the decline in recruitment may exacerbate overexploitation,²¹ and that in 3-5 years time the stock will become overfished.²² Future catches of yellowfin tuna are uncertain considering the vessels which have left the fishery for various reasons, including for security reasons owing to piracy off the coast of Somalia.²³ There are no specific Resolutions adopted in

¹³ IOTC, Resolution 02/08, '*On the Conservation of Bigeye and Yellowfin Tuna in the Indian Ocean*'.

¹⁴ IOTC, *Report of the Fourteenth Session of the IOTC*, Busan, Korea 1-5 March 2010.

¹⁵ IOTC, *Report of the Twelfth Session of the Scientific Committee* Victoria, Seychelles, 30 November -4 December 2009; *Report of the Fourteenth Session of the IOTC*, Busan, Korea 1-5 March 2010.

¹⁶ IOTC, *Report of the Ninth Session of the Scientific Committee*, Victoria, Seychelles 6-10 November 2006.

¹⁷ Ibid.

¹⁸ IOTC, *Report of the Twelfth Session of the Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009.

¹⁹ Ibid.

²⁰ IOTC, *Report of the Twelfth Session of the Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009; IOTC, *Report of the Eleventh Session of the IOTC Working Party on Tropical Tunas*, Mombasa, Kenya 15-23 October 2009.

²¹ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009) 22.

²² Ibid.

²³ IOTC, *Report of the Fourteenth Session of the IOTC*, Busan, Korea 1-5 March 2010. It is likely that the catches may reduce to below 336,000t taken in period 1998-2002.

regard to yellowfin, but a general provision on the tuna stocks in the area of IOTC competence applies to it.²⁴ During its fifth session, the scientific committee registered its concerns regarding the status of yellowfin which was said to be close or above MSY and adopted resolution 02/08 which seeks solutions for the reduction of mortality on juvenile bigeye and yellowfin tuna.²⁵ An examination of the various approaches that have been adopted by the IOTC to manage target species and conservation of non-target species follows. The approaches for managing target species include fishing capacity, fishing effort and setting of catch limits. Concerning non-target species, conservation measures of marine turtles, seabirds and sharks are examined.

4.2.1.1.1 Management of Fishing Capacity and Fishing Effort

The size of the world's tuna fleets is a matter of concern, such that many governments and industry desire to limit or reduce the number and total capacity of vessels that harvest tuna.²⁶ As fishing fleets continue to grow in number and improve in efficiency, States and RFMOs alike are becoming concerned that the increased harvesting capacity will make it more difficult to implement and sustain effective conservation measures for tuna.²⁷ Such excess fishing capacity in the world's tuna fleets could lead to overfishing of tuna populations, and to harvests in excess of demand.²⁸ Fishing capacity is defined as the maximum amount of fish over a period of time that can be produced by a vessel or fleet of vessels if fully utilised, given the biomass and

²⁴ IOTC, Resolution 10/01, '*For the Conservation and Management of Tropical Tunas Stocks in the IOTC Area of Competence*'.

²⁵ IOTC, Resolution 02/08, '*On the Conservation of Bigeye and Yellowfin Tuna in the Indian Ocean*'.

²⁶ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) ix. Efforts to reduce the world's tuna fleets include those of the Organisation for Promotion of Responsible Tuna Fisheries for buying and retiring excess longline capacity and the World Tuna Purse Seine Organisation efforts to place a moratorium on the entry of new purse seine vessels into the world's tuna fisheries. See also James Joseph, *Past Developments and Future Options for Managing Tuna Fishing Capacity with Special Emphasis on Purse Seine Fleets*, A Report within the framework of FAO Project GCP/INT/851/JPN (2005); FAO, *Management of Tuna Fishing Capacity: Conservation and Socioeconomics*, Second Meeting of the Technical Advisory Committee of the FAO Project, Madrid, Spain 15-18 March 2004.

²⁷ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) iv.

age structure of the fish stock and the present state of the technology.²⁹ Capacity management in tuna fisheries is difficult because both tuna and the vessels that harvest them travel long distances across the world's oceans both on the high seas and in the EEZs of coastal States.³⁰

In addition to establishing a working party on fishing capacity,³¹ the IOTC has adopted a number of measures to limit the capacity of tuna fleets operating in the IOTC Area. The IOTC has adopted measures imposing limits on large fishing vessels of Contracting Parties and Cooperating non-Contracting Parties (CPCs) by size and numbers, and gear type. The IOTC requires Contracting Parties and CPCs which have more than 50 vessels on the 2003 IOTC Record of Vessels to limit the number of their fishing vessels larger than 24 meters length overall to the number of its fishing vessels registered in 2003 in the IOTC Record of Vessels.³² Contracting Parties and CPCs are also required to notify the IOTC Secretariat, the lists of vessels, by gear type, over 24 meters overall length and over, 24 meters if they fished outside the EEZs.³³ Another measure adopted by the IOTC to manage fishing capacity is aimed at reducing IUU fishing activities by large scale tuna vessels and also to reduce the catch of juvenile bigeye tuna.³⁴

In addition to the fishing capacity measures, the IOTC has adopted binding management measures, relating to fishing effort, aimed at limiting the catch of bigeye. Resolution 01/04 aims to limit the fishing efforts of non-Members of the IOTC whose vessels fish bigeye tuna. The IOTC requests non-Members to reduce their efforts in

²⁸ James Joseph, *Past Developments and Future Options for Managing Tuna Fishing Capacity with Special Emphasis on Purse Seine Fleets*, A Report within the framework of FAO Project GCP/INT/851/JPN (2005)

²⁹ FAO, *Report of the Technical Working Group on the Management of Fishing Capacity*, La Jolla, California, United States, 15-18 April 1998. FAO Fisheries report No. 586.

³⁰ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) vii.

³¹ The working Party aims to establish methods of estimating fishing capacity. See IOTC, *Report of the First Meeting of the Working Party on Fishing Capacity*, Mombasa, Kenya 22 October 2009.

³² IOTC, Resolution 03/01, '*On the Limitation of Fishing Capacity of Contracting parties and Cooperating non-Contracting Parties*', para 1.

³³ IOTC, Resolution 09/02, '*On the Implementation of a Limitation of Fishing Capacity of Contracting Parties and Cooperating non-Contracting Parties*', para 1.

³⁴ IOTC, Resolution 99/01 '*On the Management of Fishing Capacity and on the Reduction of Catch of Juvenile Bigeye Tuna by Vessels, Including Flag of Convenience Vessels, Fishing for Tropical Tunas in the IOTC Area of Competence*'.

2002, in relation to the 1999 levels.³⁵ Another strategy that the IOTC has adopted for effort control is time and area closures to limit catches of yellowfin and bigeye. Time and area closures are considered very effective tools for fisheries management.³⁶ Closed seasons in fisheries are used to protect stocks during life stages that are critical (for example, spawning) or as a means to lower catch.³⁷ Thus, closed seasons reduce the catching power and fishing mortality by limiting the amount of fishing to a desired level in order to increase stock size,³⁸ and may aid in the recovery of depleted stocks.³⁹

In order to reduce the fishing pressure on yellowfin and bigeye tuna stocks, the IOTC has taken steps directed at the closure of defined areas. Resolution 10/01 of the IOTC establishes a closure of a defined area for purse seine vessels according to the recommendations of the scientific committee.⁴⁰ The resolution is applicable in 2011 and 2012 for all vessels of 24 meters overall length and over, and under 24 meters if they fish outside their EEZ.⁴¹ The area will be closed for longline vessels each year from 12.00pm on 1st February to 12.00am on 1st March, and from 12.00pm on 1st November to 12.00am on 1st December for purse- seine vessels.⁴²

4.2.1.1.2 Setting Catch Limits

The IOTC has adopted a single measure limiting the catch of bigeye taken by Contracting Parties and CPC's. The catch of bigeye tuna is to be limited to the levels

³⁵ IOTC, Resolution 01/04 'On Limitation of Fishing Effort of Non-members of IOTC whose Vessels Fish Bigeye Tuna'.

³⁶ Kanchan Ratna Chopra (ed), *Ecosystems and Human Well-being: policy Responses: Findings of the Responses Working Group of the Millennium Ecosystems Assessment* (Island Press, 2005) 201. The effectiveness of time and area closures is more pronounced when they are combined with other measures.

³⁷ Ibid.

³⁸ Jim Beets and Mark Manuel, *Temporal and Seasonal Closures in Fisheries Management: A Review with Application to Hawaii* (2007). <http://hawaii.gov/dlnr/dar/coral/pdfs/BeetsTempClosuresRpt08.pdf> (accessed 6 February 2010).

³⁹ Kanchan Ratna Chopra (ed), *Ecosystems and Human Well-being: policy Responses: Findings of the Responses Working Group of the Millennium Ecosystems Assessment* (Island Press, 2005) 201.

⁴⁰ IOTC, *Report of the Fourteenth Session of the Indian Ocean Tuna Commission*, Busan, Korea 1-5 March 2010, para 42. The area is defined by the following coordinates: 0 degrees to 10 degrees, North 40 degrees and 60 degrees East.

⁴¹ IOTC, Resolution 10/01 *for the Conservation and Management of Tropical Tunas Stocks in the IOTC Area of Competence*, para 1.

⁴² IOTC, Resolution 10/01 *for the Conservation and Management of Tropical Tunas Stocks in the IOTC Area of Competence*, para 2.

reported by the scientific committee.⁴³ In connection with the bigeye catch limits imposed by the IOTC, Taiwanese vessels fishing in the IOTC area from 2005, have been limited to an annual quota of 35,000 tonnes of bigeye tuna.⁴⁴ Although the management measures involving the setting of catch quotas for bigeye were to be addressed at the tenth meeting of the IOTC, it was felt that more work was needed to further develop the concept.⁴⁵

The IOTC further considered proposals to introduce catch restrictions on yellowfin and bigeye, including catch allocations for members during the twelfth meeting. However, no consensus was reached and the proposals were not considered.⁴⁶ The IOTC anticipates the adoption of measures for quota allocation in 2012 to supplement these efforts.⁴⁷

4.2.1.1.3 Analysis of IOTC Approaches to Management of Target Species

The IOTC achieves its mandate by adopting conservation and management measures facilitated through its decision-making procedure. The lack of adoption of appropriate conservation and management measures reflects some degree of non-commitment on the part of Members and flaws in the decision-making procedures of the IOTC. An examination of the management approaches for target species reveals a number of flaws in the management of the Indian Ocean tuna fisheries.

Although the IOTC places emphasis on capacity limits, these limits are not combined with catch quotas. Generally, a mechanism that imposes capacity limits without limiting the total catch has its consequences. The response is that, the fishing industry tends to improve the efficiency of their vessels to enable them to spend more days at sea.⁴⁸ Consequently, larger quantities of tuna are caught. The IOTC could possibly minimise mortality of tuna by combining capacity limits with catch quotas.

⁴³ IOTC, Resolution 05/01 '*On Conservation and Management Measures for Bigeye Tuna*', para 1.

⁴⁴ IOTC, Resolution 05/01 '*On Conservation and Management Measures for Bigeye Tuna*', para 2.

⁴⁵ IOTC, *Report of the Tenth Session of the Indian Ocean Tuna Commission*, Goa, India 22-26 May 2006, para 37.

⁴⁶ IOTC, *Report of the Thirteenth Session of the Indian Ocean Tuna Commission*, Bali, Indonesia 30 March-3 April 2009, para 49 and 50.

⁴⁷ IOTC, *Report of the Fourteenth Session of the Indian Ocean Tuna Commission*, Busan, Korea 1-5 March 2010, para 44.

⁴⁸ J Joseph (ed.) *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) xi.

The IOTC could set an overall quota and allocate it among the participants in the fishery, thereby setting a limit on the quantity of fish each participant can harvest. By so doing the number of vessels that could operate in the IOTC area is limited by the fishing opportunities available to the participants.

A key basis for the conservation of tuna is the setting of the total allowable catch (TAC). As was discussed in chapter 2(2.5.1), the TAC is a management approach that limits the commercial exploitation of fish stocks in order to ensure that no more fish are caught from a stock than is biologically justifiable. The TAC is also fundamental to the allocation of fishing opportunities in RFMOs. States are thus required to agree, as appropriate, on participatory rights such as allocations of allowable catch or levels of fishing effort.⁴⁹ To date, the IOTC has not established any measures in respect of the TAC. The report of the IOTC performance review has identified the need for the Commission to explore other approaches to the management of target species, such as the TAC.⁵⁰

The decision-making procedure of the IOTC is required to facilitate the adoption of conservation and management measures for tuna stocks under its purview. Such procedures should be sound,⁵¹ and effective in meeting the obligations of the IOTC.⁵² The IOTC records its binding decisions relating to conservation and management measures through *Resolutions* and adopts non-binding decisions which take the form of *Recommendations*. Proposals can be made by subsidiary bodies such as the scientific committee or other technical meetings such as the compliance committee,⁵³ and also by the Members of the IOTC for consideration at meetings.⁵⁴ These may be adopted immediately as *Resolutions* which create legal obligations on Members of the IOTC, or they may remain as *Recommendations* which are sequentially numbered including by years. Therefore, the *Resolutions* and *Recommendations* adopted by the IOTC should

⁴⁹ *UN Fish Stocks Agreement*, Art. 10(b).

⁵⁰ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009) 29.

⁵¹ Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 76.

⁵² The UN Fish Stocks Agreement provides the principles for assessing decision-making. These are Articles 5(a, b, c, d, e, and g) and 10(a, b and d).

⁵³ The Compliance Committee made recommendations on fleet development plans in 2010. See IOTC, *Report of the Fourteenth Session of the Indian Ocean Tuna Commission*, Busan, Korea 1-5 March 2010, para 29.

⁵⁴ The scientific committee may recommend conservation measures on allocation criteria, quotas etc.

not only be directed at meeting the objectives of the Commission for the tuna stocks under the purview of the IOTC, but also respond to the scientific advice provided to the Commission. As such, the UN Fish Stocks Agreement requires measures to be based on the best scientific evidence. The political will of members to make the appropriate decisions and implement them is vital for the effective governance of the Commission.

It thus becomes evident that the conservation and management measures adopted by the Commission in respect of target species are not consistent with the principles set out in the UN Fish Stocks Agreement. Additionally, measures have not been adopted to address specific issues relating to the conservation of such species. For instance, although the status of yellowfin tuna appears uncertain, and that of bigeye over utilised the Commission has yet to adopt appropriate measures to address these issues. Moreover, no measures have been adopted to prevent further decline of the yellowfin stocks or to ensure their recovery even though it has been established that the stock, which is overexploited, is also predicted to become overfished in 3-5 years time.

A significant flaw in the decision-making approach followed by the Commission is the possibility for members to object to conservation and management measures. The political will of members can be reflected in the objection process.⁵⁵ The objection procedure in the IOTC Agreement can result in a Member not being bound by a conservation and management measure. The likelihood of members who opt to undermine the conservation objectives of the Commission is great. The procedure equally causes unnecessary delays in the entry into force of such measures and could even result in failure to reach a decision.⁵⁶ Further, if objections to such measures are made by more than 1/3 of the Members of the Commission, then the other Members are not bound by that measure.⁵⁷ Such delays are not consistent with the requirement of the UN Fish Stocks Agreement of timeliness and effectiveness.

As the decision-making process is provided in the IOTC Agreement, a possible solution would be to amend the Agreement. However, as observed by Edeson, many States are reluctant to undertake the revision of the constitutive treaty of an RFMO due

⁵⁵ Judith Swan, *Decision-Making in Regional Fisheries Bodies or Arrangements: The Evolving Role of RFBs and International Agreement on Decision-Making Processes*, FAO Fisheries Circular No. 995 (FAO, 2004) 9.

⁵⁶ The waiting period required by IOTC between notification and entry into force is 120 days. See the *IOTC Agreement*, Article IX(5).

⁵⁷ *IOTC Agreement*, Art. IX(6).

to the slow process that this may involve.⁵⁸ Thus, it is easier to achieve a *de facto* amendment of such agreements through the practice of Members or the adoption of resolutions which constitute that practice.⁵⁹ In adopting its measures, the IOTC may consider the recommendation of the UN Fish Stocks Agreement Review Conference of 2006 regarding members that opt-out which states that: “States through RFMOs should ensure that post opt-out behaviour is constrained by rules to prevent opting-out parties from undermining, clear processes for dispute resolution and a description of alternative measures that will be implemented in the interim”.⁶⁰

It has been proposed in a recent report on recommended best practices for RFMOs that, the objector should also be required to give valid reasons for its objection and not simply lodge one.⁶¹ The WCPF Convention for example, requires the objector to give a statement of the grounds for objection and also to circulate the statement to all Members of the Commission.⁶² Additionally, the permissible grounds should be restricted.⁶³ The Commission would need to establish interim measures for the rights of the other members, the status of the stocks and the wider ecosystem while an objection is being considered.⁶⁴ To date the IOTC has not imposed any condition that would serve as a deterrent on Members who object to a conservation and management measure. Members can also object to a conservation and management measure without providing

⁵⁸ William Edeson, ‘Some Future Directions for Fishing Entities in Certain Regional Fisheries Management Bodies’ (2006)37 *Ocean Development & International Law* 245, 245.

⁵⁹ William Edeson, ‘Some Future Directions for Fishing Entities in Certain Regional Fisheries Management Bodies’ (2006)37 *Ocean Development & International Law* 245, 245.

⁶⁰ United Nations General Assembly (hereinafter UNGA), *Report of the Review Conference on the Agreement of the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling fish Stocks and Highly migratory fish Stocks*, A/CONF.210/2006/205, para 32(f) of the Annex. <http://www.un.org/> (accessed 16 August 2010).

⁶¹ Lodge at al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 76.

⁶² WCPF Convention, Annex II.

⁶³ Lodge at al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 76. A permissible reason would be considered to be any alleged incompatibility with a provision contained in the LOSC, UN Fish Stocks Agreement or IOTC Agreement.

⁶⁴ Ibid.

a valid reason, thereby contributing to the ineffectiveness of the management of the IOTC.

The commitment of Members of the Commission to participate in the work of the IOTC is fundamental to the achievement of its objectives. Recognising the challenging responsibilities that the present day RFMOs are faced with, the international community emphasises the need for political will to strengthen and modernise them.⁶⁵ To achieve such changes it is essential that all Commission Members ratify the relevant legal instruments, particularly the UN Fish Stocks Agreement which governs high seas tuna stocks. To date, only fifteen out of twenty-eight Members of the IOTC have ratified the UN Fish Stocks Agreement.⁶⁶ A high level of trust and credibility between Member States is essential for commitment to RFMO change. A well-structured dispute settlement scheme for all aspects of RFMO operations is fundamental for the development of such trust and credibility. However, negotiations undertaken on changes to the operation of an RFMO need the appropriate institutional support that would leave little or no scope for opting out without consequence.⁶⁷

4.2.1.2 Approaches to Conservation of Non-Target Species

The incidental catch and mortality of non-target species in tuna fisheries are perceived as a concern due to their wider ecological impacts. By-catch in commercial fishing operations affects marine fisheries in several ways. These include impacts on top predators, removal of individuals from many species, elimination of prey, and waste.⁶⁸ Consequently, by-catch has emerged as a major issue of global concern.⁶⁹ The sustainability of tuna fisheries depends highly on ecosystem health. As such, ecological

⁶⁵ See Report on the *Conference on the Governance of High Seas Fisheries and the UN Fish Stocks Agreement: Moving from Words to Action*, St. Johns, Newfoundland and Labrador May 1-5, 2005. http://www.dfo-mpo.gc.ca/fgc-cgp/conf_report_e.pdf (accessed 3 September 2010). At the Conference on the Governance of High Seas Fisheries and the UN Fish Stocks Agreement, held in St. Johns Canada in 2005, a declaration was made in this regard calling for mandates of RFMOs to be broadened and strengthened in order to meet these challenges.

⁶⁶ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009)16.

⁶⁷ Organisation for Economic Cooperation and Development (OECD), *Strengthening Regional Fisheries Management Organisations*, (OECD, 2009) 14.

⁶⁸ Martin A Hall, Dayton L Alverson and Kaija I Metuzals, 'By-Catch: Problems and Solutions' (2000) 41(1-6) *Marine Pollution Bulletin* 204, 204.

⁶⁹ Stephen Hall and Brooke M Mainprize, 'Managing By-Catch and Discards: How Much Progress are we Making and How Can We Do Better?' (2005) 6 *Fish and Fisheries* 134, 135.

and ecosystem considerations have become a priority in fisheries management with the realisation that a more holistic approach to fisheries management is needed.

The Ecosystem approach to fisheries (EAF) management has emerged from the concerns of the impacts of fishing on the wider ecosystem apart from the target species. The FAO defines EAF as follows: “An Ecosystem Approach to Fisheries (EAF) strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties of biotic, abiotic and human components of ecosystems and their interactions and applying an integral approach to fisheries within ecologically meaningful boundaries”.⁷⁰

The main objective of the EAF is the sustainable use of the whole ecosystem and not just targeted species.⁷¹ The EAF combines ecosystem management and fisheries management, recognising the interactions between fisheries and the ecosystem which support them, as well as human interactions.⁷² Such an approach aims to conserve ecosystem structures, processes and interactions through sustainable use, thereby ensuring the integrity of the ecosystem. The purpose of an ecosystem approach to fisheries is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardising the options for future generations to benefit from the full range of goods and services provided by ecosystems.⁷³ Ecosystem management involves ecosystem complexity, and uncertainty in predicting impacts, thus requiring a certain degree of precaution.⁷⁴ In the absence of sufficient tuna fisheries data, ecosystem based management could be used to develop precautionary safety margins such as reduced catch limits or larger closed areas.⁷⁵

Some of the fundamental principles of EAF have been derived from the LOSC.⁷⁶ These principles are reflected through the provisions of the LOSC that impose conservation and management obligations upon States to ensure that the living

⁷⁰ FAO, *Fisheries Management: The Ecosystem Approach to Fisheries*, FAO Technical Guidelines for Responsible Fisheries No. 4, Supplement 2 (FAO, 2003)14.

⁷¹ FAO, *Putting into Practice the Ecosystem Approach to Fisheries* (FAO, 2005) 4.

⁷² Ibid.

⁷³ FAO, *Fisheries Management: The Ecosystem Approach to Fisheries*, FAO Technical Guidelines for Responsible Fisheries No. 4, Supplement 2 (FAO, 2003)14.

⁷⁴ Pikitch et al, ‘Ecosystem-based Fishery Management’ (2004) 305(5682) *Science* 346-347.

⁷⁵ Ibid.

⁷⁶ FAO, *Fisheries Management: The Ecosystem Approach to Fisheries*, FAO Technical Guidelines for Responsible Fisheries No. 4, Supplement 2 (FAO, 2003) 83.

resources of the EEZ are not endangered by over-exploitation,⁷⁷ to maintain and restore populations of harvested species at levels which can produce maximum sustainable yield and take into account the economic needs of coastal fishing communities, fishing patterns and interdependence of stocks.⁷⁸ These principles are fortified by the UN Fish Stocks Agreement⁷⁹ which also obligates States to protect biodiversity in the marine environment as a whole.⁸⁰ Further, States are required to assess the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks.⁸¹ The UN Fish Stocks Agreement also requires States to minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species and impacts on associated or dependent species, through measures including the use of environmentally safe fishing gear.⁸² Thus, Article 5 of the UN Fish Stocks Agreement on non-target species is far more elaborate than the general requirement of Article 61(4) of the LOSC for States to consider the effects on associated and dependent species.⁸³

In respect of non-target species, the IOTC has adopted resolutions in respect of marine turtles,⁸⁴ seabirds,⁸⁵ and sharks.⁸⁶ The Resolutions on seabirds and marine turtles have been derived from Recommendations which had earlier been made concerning the incidental mortality of seabirds,⁸⁷ and mitigating the impact of fishing operations on sea turtles.⁸⁸ The adoption of these Resolutions reflects the commitment of the IOTC to establish mitigation measures for the conservation of seabirds and turtles.

⁷⁷ LOSC, Art. 61(2).

⁷⁸ LOSC, Art. 61(3).

⁷⁹ UN Fish Stocks Agreement, Art. 5(b) and (e).

⁸⁰ UN Fish Stocks Agreement, Art. 5(g).

⁸¹ UN Fish Stocks Agreement, Art. 5(d).

⁸² UN Fish Stocks Agreement, Art. 5(f).

⁸³ G G Schram and A Tahindro, 'Development in Principles for the Adoption of Fisheries Conservation and Management Measures' in Marion Markowski, *The International Law of EEZ Fisheries* (Europa Law Publishing, 2010) 34.

⁸⁴ IOTC, Resolution 09/06 '*On Marine Turtles*'.

⁸⁵ IOTC, Resolution 10/06, '*On Reducing the Incidental Bycatch of Seabirds in Longline Fisheries*'.

⁸⁶ IOTC, Resolutions 05/05, '*Concerning the Conservation of Sharks Caught in Association with Fisheries Managed by IOTC*'; Resolution 08/01, '*Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties*'.

⁸⁷ IOTC, Recommendation 05/09, '*On Incidental Mortality of Seabirds*'.

⁸⁸ IOTC, Recommendation 05/08, '*On Sea Turtles*'.

4.2.1.2.1 Marine Turtles

The resolution on marine turtles requires Contracting Parties and Cooperating non-Contracting Parties (CPCs) to implement the appropriate measures relating to turtles in accordance with the *FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operation* (hereinafter the FAO Guidelines) and to report their progress accordingly.⁸⁹ The FAO Guidelines are aimed at reducing interactions between sea turtles and fishing gear and to reduce the proportion of sea turtle mortality in marine capture fisheries.⁹⁰

The IOTC requires CPCs to furnish available information to the Scientific Committee on successful mitigation measures and other impacts on sea turtles in the IOTC Area, such as the deterioration of nesting sites and swallowing of marine debris.⁹¹ Fishermen are also required to bring aboard, if practicable, any captured hard shelled turtle that is comatose or inactive and foster its recovery, including aiding in its resuscitation before returning it to the water.⁹² The IOTC has established specific requirements for each of the fishing gears with respect to mitigation measures for marine turtles. In this regard, CPCs with gillnet, longline and seine vessels are to require that operators of such vessels record and report all incidents involving marine turtles in their logbooks (including species, location of capture, conditions, action taken on board and location of release).⁹³ CPCs with longline vessels must ensure that operators of such vessels carry line cutters and de-hookers to facilitate the appropriate handling and prompt release of marine turtles. These operators should also be required to carry and use dip-nets where appropriate.⁹⁴ CPCs with seine vessels shall ensure that operators of

⁸⁹ FAO, *Guidelines to Reduce Sea Turtle Mortality in Fishing Operations* (FAO, 2009). The FAO Guidelines which were adopted at the 26th FAO-COFI Session in 2005 are voluntary and they provide assistance for the preparation of national or multilateral fisheries management measures and industry initiatives for the purpose of conserving turtles by reducing the negative impacts that fisheries may have in them.

⁹⁰ Ibid.

⁹¹ IOTC, Resolution 09/06, para. 2.

⁹² IOTC, Resolution 09/06, para 4.

⁹³ IOTC, Resolution 09/06, para 5, 6 and 7.

⁹⁴ IOTC, Resolution 09/06, para 6. De-hookers are used to remove ingested hooks from turtles that cannot be boated and to engage a loose hook when turtles are entangled but not hooked and line is being removed. Dip-nets facilitate safe handling of turtles and access to them for cutting lines in a manner that minimizes injury and trauma to sea turtles. See NOAA, *Code of Federal Regulations, Title 50: Wildlife and Fisheries* (December 2005), <http://cfr.vlex.com/vid/660-turtle-take-mitigation-measures-19895922> (accessed 2 September 2010).

such vessels avoid encirclement of marine turtles or safely release any marine turtle that may become entangled.⁹⁵

The IOTC also acknowledges the activities undertaken to conserve marine turtles and habitats on which they depend within the framework of the Indian Ocean-South East Asian Marine Turtle Memorandum of Understanding (IOSEA), in particular its *Resolution to Promote the use of Marine Turtle Bycatch Reduction Measures* by IOSEA signatory States. In this regard, the IOTC encourages CPCs to collaborate with IOSEA and take into account the IOSEA MoU.⁹⁶

4.2.1.2.2 Seabirds

Concerning seabirds, CPCs are encouraged to implement the *International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries* (IPOA-Seabirds).⁹⁷ In this regard, Contracting Parties and CPCs are required to update the Scientific Committee, and the IOTC of the status of their National Plans of Action (NPOAs) for Reducing Incidental Catches of Seabirds in Longline Fisheries. CPCs are required to employ effective mitigation measures aimed at reducing levels of seabird bycatch.⁹⁸ Accordingly, fishing operations are to be conducted such that hooklines sink beyond the reach of seabirds as soon as possible after they are put in the water.⁹⁹

The minimum technical standards for mitigation measures are provided in Annex 1 of Resolution 10/06 of the IOTC. These standards provide guidance for the methods and specifications for implementing mitigation measures for seabirds. The mitigation measures for seabirds include, *inter alia*, bird-scaring lines which deter birds from approaching the branch line, weighted branch lines which can be attached to

⁹⁵ IOTC, Resolution, 09/06, para 7.

⁹⁶ IOTC, Resolution, 09/06, para 13.

⁹⁷ IOTC, Recommendation 05/09, para. 1. The *IPOA-Seabirds* is voluntary and has been elaborated within the framework of the FAO Code of Conduct for Responsible Fisheries. It applies to States in the waters of which longline fisheries are being conducted by their own or foreign vessels and to States that conduct longline fisheries on the high seas and in the EEZs of other States. Its objective is to reduce the incidental catch of seabirds where it occurs. See FAO, *International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries* (FAO, 1999) 2.

⁹⁸ IOTC, Resolution 10/06, para. 1.

⁹⁹ IOTC, Resolution 10/06, para. 2. Hookline is the groundline or mainline to which the baited hooks are attached by snoods.

branch lines, and management of offal discharge.¹⁰⁰ The design and deployment of bird scaring lines (tori lines) is provided in Annex II of Resolution 10/06.

4.2.1.2.3 Sharks

In reference to sharks, Cooperating non-Contracting Parties (CPCs) are to take the necessary measures requiring their fishermen to fully utilise their entire catches of sharks.¹⁰¹ This means that all parts of the shark must be retained by the fishing vessel excepting the head, guts and skins, to the first point of landing. In connection with this, CPCs are to require their vessels to not have onboard fins that total more than 5% of the weight of the sharks onboard, up to the first point of landing.¹⁰² Accordingly, any fins harvested in contravention of Resolution 05/05 of the IOTC should not be retained onboard fishing vessels, transhipped or landed.¹⁰³ Further, the release of live sharks, especially juveniles and pregnant sharks caught incidentally is encouraged in fisheries not directed at sharks.¹⁰⁴ Resolution 10/12 of the IOTC prohibits retention on board vessels of thresher sharks, their transshipment, landing, storing, selling or offering for sale any part or whole carcass of these sharks. Thresher sharks are to be released unharmed. The International Union for Conservation of Nature (IUCN) has classified all species of thresher shark as globally vulnerable.¹⁰⁵

The IOTC has made some progress in fulfilling the mandate given to it in respect of non-target species. Whereas the IOTC has not specifically incorporated ecosystem based considerations into its mandate, it has established the Working Party on Ecosystem and By-catch (WPEB) to provide the relevant advice on, *inter alia*, the

¹⁰⁰ IOTC, Resolution 10/06, Annex I.

¹⁰¹ IOTC, Resolution 05/05, para. 3. Although there is no scientific basis for the 5% ratio of fins to body weight, this criterion if enforced reduces the practice of finning which is wasteful since the rest of the carcass is discarded. It also reduces fishing effort, particularly on sharks since vessels would need to return to port more frequently to unload. Both RFMOs and shark experts are still uncertain of the appropriate percentage level. The WPEB has recommended that sharks be landed with fins naturally attached as a way of ensuring correct catch statistics and facilitating collection of biological information for assessment of shark population. As well, this would reduce the practice of shark finning. See IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya 12-14 October 2009.

¹⁰² IOTC, Resolution 05/05, para. 4.

¹⁰³ IOTC, Resolution 05/05, para. 6.

¹⁰⁴ IOTC, Resolution 05/05, para. 7.

¹⁰⁵ The IUCN Red List of Threatened Species, <http://www.iucnredlist.org/apps/redlist/details/39339/0> (accessed 2 September 2010).

conservation of non-target species.¹⁰⁶ For instance, the responsibilities of the working Party with respect to marine turtles include; developing recommendations for mitigation measures, to develop guidelines for the appropriate handling and release of by-caught turtles and standards for data collection, and to produce a marine turtle identification guide.¹⁰⁷ The IOTC is also considered by the Parties to the Agreement on the Conservation of Albatrosses and Petrels as the RFMO with the strongest mitigation measures for seabirds.¹⁰⁸ Equally importantly, the IOTC has also taken a precautionary and internationally cooperative approach in the conservation of thresher sharks.

In respect of discards, the IOTC requires Contracting Parties and CPCs to encourage purse seine vessels to minimise discards of bluefin, yellowfin and skipjack tunas, by retaining on board and landing all fish unless they are unfit for human consumption.¹⁰⁹ Additionally, the measures adopted by the Commission in respect of non-target species which are considered either vulnerable or endangered are entirely consistent with Articles 61(4) and 119(1)(b) of the LOSC and Article 5(e) of the UN Fish Stocks Agreement.

4.2.1.2.4 Analysis of the IOTC Approaches to Conservation of Non-Target Species

As the mandate of the IOTC derives from the IOTC Agreement, it is necessary for it (the Agreement) to reflect the provisions concerning the management of tuna stocks, non-target and associated or dependent species and the marine ecosystem as provided for in international fisheries instruments. Notably, the IOTC Agreement does not fully incorporate the relevant provisions of the LOSC and the UN Fish Stocks Agreement in this regard. The IOTC Agreement has not included any provisions requiring the adoption of conservation and management measures directed at non-target species and species associated with or dependent upon tuna. Neither has it provided for the protection of biodiversity in the marine environment,¹¹⁰ or addressed the

¹⁰⁶ The WPEB has advised that Countries be assessed accordingly for progress in developing NPOAs for sharks, seabirds and turtles.

¹⁰⁷ IOTC, Resolution 09/06, para. 9.

¹⁰⁸ IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya 12-14 October 2009. ACAP is a multilateral agreement which came into force in 2004 and seeks to conserve albatrosses and petrels. See <http://www.acap.aq/> (accessed 3 September 2010).

¹⁰⁹ IOTC, Recommendation 10/13 ‘*On The Implementation of a Ban on Discards of Skipjack Tuna, Yellowfin Tuna, Bigeye Tuna, and Non Targeted Species Caught by Purse Seine*’.

¹¹⁰ UN Fish Stocks Agreement, Art. 5(g).

requirements to minimize pollution, waste, discards, and catch by lost or abandoned gear.¹¹¹ It is necessary that these aspects are incorporated in the IOTC Agreement in recognition of their role in the management of tuna fisheries.

The effects of fishing on non-target species is not accounted for in the management practices of the IOTC. Whereas the IOTC has adopted mitigation measures for turtle, seabird and shark bycatch, it has not established catch limits for them. Further, despite the adoption of measures to mitigate sea turtle by-catch by releasing of turtles caught or entangled in longlines, and also the use of dip-nets, the IOTC is yet to develop the relevant guidelines. For the effective conservation of sea turtles the Commission needs to develop these guidelines which are readily available from other organisations.

The IOTC review specifies the need for the IOTC Agreement to incorporate ecosystem based considerations such as the adoption of conservation and management measures for non-target species and species dependent on or associated with target stocks.¹¹² It suffices to note that the IOTC has focused on the major commercial stocks, namely skipjack, bigeye, yellowfin, swordfish and albacore. The status of the rest of the stocks is reported as uncertain.¹¹³ For these stocks, no quantitative assessments have been carried out and there are no reliable indicators.¹¹⁴ This means the effect of the tuna fishery on these species is not known. The following sub-section discusses the data contribution and sharing provisions of the IOTC including for target species and non-target species, and vessels characteristics.

4.2.2 Data Contribution and Sharing

To achieve effective management of the tuna fisheries under its purview, the IOTC requires good quality data. Such data are essential for the purposes of obtaining best scientific evidence upon which to base conservation and management decisions necessary for the long-term sustainable utilisation of tuna fisheries. The UN Fish Stocks Agreement compliments the LOSC with respect to the obligation of States to cooperate

¹¹¹ *UN Fish Stocks Agreement*, Art. 5(f).

¹¹² IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009) 18.

¹¹³ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008. These species include blue marlin, black marlin, striped marlin, sailfish, bullet tuna, frigate tuna, spanish mackerel, kawakawa, longtail tuna, and king mackerel.

¹¹⁴ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008.

in the contribution and exchange of tuna fisheries data.¹¹⁵ Thus, Article 5(j) of the UN Fish Stocks Agreement requires States to “collect and share, in a timely manner, complete and accurate data concerning fishing activities on, *inter alia*, vessel position, catch of target and non-target species and fishing effort, as set out in Annex I, as well as information from national and international research programmes.” Additionally, the UN Fish Stocks Agreement provides the need for coastal and flag States cooperating through RFMOs, to agree on standards for collection, reporting, verification and exchange of data,¹¹⁶ and also to compile and disseminate accurate and complete statistical data, as described in Annex I, to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate.¹¹⁷

The UN Fish Stocks Agreement also stipulates the obligations of flag States in respect to data provision, requiring them to provide such information as may be necessary in order to fulfil their obligations under the Agreement.¹¹⁸ In connection with this, flag States are to take measures including “requirements for recording and timely reporting of vessels position, catch of target and non-target species, fishing effort and other relevant fisheries data in accordance with subregional, regional and global standards for collection of such data.¹¹⁹ Further, flag States are required to collect and exchange scientific, technical and statistical data with respect to [tuna fisheries],¹²⁰ to ensure that the data are collected in sufficient detail to facilitate effective stock assessment,¹²¹ and to take appropriate measures to verify the accuracy of such data.¹²² These obligations are to be fulfilled in accordance with the specifications in Annex 1 of the UN Fish Stocks Agreement. Additionally, flag States are obligated to cooperate, to agree, on the specification of data and the format in which they are to be provided to

¹¹⁵ *UN Fish Stocks Agreement*, Article 5 states that: “In order to conserve and manage straddling fish stocks and highly migratory fish stocks, coastal States and States fishing on the high seas shall, in giving effect to their duty to cooperate in accordance with the Convention:” Article 61(5) of the *LOSC* imposes a duty upon the coastal State to “contribute and share data on a regular basis through [RFMOs], with the participation of all States concerned...”

¹¹⁶ *UN Fish Stocks Agreement*, Art. 10(e).

¹¹⁷ *UN Fish Stocks Agreement*, Art. 10(f).

¹¹⁸ *UN Fish Stocks Agreement*, Art. 14(1).

¹¹⁹ *UN Fish Stocks Agreement*, Art. 18(3)(e).

¹²⁰ *UN Fish Stocks Agreement*, Art. 14(1)(a).

¹²¹ *UN Fish Stocks Agreement*, Art. 14(1)(b).

¹²² *UN Fish Stocks Agreement*, Art. 41(1)(c).

[RFMOs], taking into account the nature of the stocks and the fisheries for those stocks.¹²³

4.2.2.1 Data on Target Species

As established earlier in chapter 2(2.5.2), the UN Fish Stocks Agreement stipulates the types of data to be collected and submitted to RFMOs by States. These include catch and effort data,¹²⁴ biological data,¹²⁵ and vessel identification and gear related data.¹²⁶ The IOTC has adopted several measures requiring submission of data by Members and CPCs. First, the Commission requires CPCs to submit nominal catch data which comprises the total catch by species and gear for all species under the IOTC mandate.¹²⁷ Second, is catch and effort data for: a) surface fisheries comprising catch weight by species and fishing effort, purse seine data stratified by fishing mode (e.g. free swimming schools or schools associated with floating objects); b) longline fisheries made up of catch by species, in numbers or weight, and effort as the number of hooks deployed; and c) coastal fisheries by species, fishing gear and fishing effort.¹²⁸ Third, is the size data for all gears and species covered by the IOTC mandate according to the guidelines set out by the scientific committee.¹²⁹ Lastly, are the activities of supply vessels and the use of fish aggregating devices (FADs) which are part of the fishing

¹²³ UN Fish Stocks Agreement, Art. 41(2)(a).

¹²⁴ UN Fish Stocks Agreement Annex I, Art. 3(1)(a).

¹²⁵ UN Fish Stocks Agreement Annex I, Art. 3(2)(b).

¹²⁶ UN Fish Stocks Agreement Annex I, Art. 4(1)(a, b, c, d).

¹²⁷ IOTC, Resolution 10/02, *Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties (CPCs)*, para. 2. These data are highly aggregated statistics for each species. It is estimated per fleet, gear and year for a given area. See IOTC, *Report on the IOTC Fisheries Statistics record*: IOTC-2008CoC06.

¹²⁸ IOTC, Resolution 10/02, *Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties (CPCs)* para. 3. This is fine-scale data from logbooks, reported per fleet, year, gear, type of school, month, grid and species. See IOTC, *Report on the IOTC Fisheries Statistics record*: IOTC-2008CoC06.

¹²⁹ IOTC, Resolution 10/02, *Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties (CPCs)* para. 4. This refers to size frequency distribution of IOTC species per fleet, year, gear, type of school, quarter and 5 degrees square areas.

effort exerted by the purse seine fleet.¹³⁰ These data are to be submitted according to specific timelines.¹³¹

In addition to these specific data requirements, the Commission requires each flag CPC to ensure that all purse seine vessels flying its flag and authorized to fish species managed by the IOTC be subject to a data recording system.¹³² In this respect, a logbook with relevant data is to be submitted to the flag State and coastal State administration for onward transmission to the IOTC Secretariat and the Scientific Committee by June 30th of the following year on an aggregated basis.¹³³ These same requirements apply to longline fishing vessels, which in addition should specifically include information of the vessel, trip and gear configuration on one part, and information of longline operation and catch on the other.¹³⁴

4.2.2.2 Data on Non-Target Species

Aside from data directly related to target fish stocks, States are required to collect and share data on non-target and associated or dependent species.¹³⁵ States are also obliged to develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans which are necessary to ensure the conservation of such species and to protect habitats of special concern.¹³⁶

¹³⁰ IOTC, Resolution 10/02, *Mandatory statistical requirements for IOTC Members and Cooperating non-Contracting Parties*, para. 5.

¹³¹ IOTC, Resolution 10/02, *Mandatory statistical requirements for IOTC Members and Cooperating non-Contracting Parties* para. 6. a) longline fleets operating in the high seas are to provide provisional data for the previous year not later than 30 June with final data submitted no later than 30 December; b) all other fleets are to submit final data for the previous year no later than 30 June.

¹³² IOTC, Resolution 10/03, *Concerning the Recording of Catch by Fishing Vessels in the IOTC Area* para1. Within the IOTC area of competence, all purse- seine vessels 24 metres length overall or greater and those under 24 metres if they fish outside the EEZs of their flag States shall keep a logbook to provide data for use by Working Parties and the Scientific Committee.

¹³³ IOTC, Resolution 10/03, *Concerning the Recording of Catch by Fishing Vessels in the IOTC Area*, para. 2.

¹³⁴ IOTC, Resolution 08/04, *Concerning the Recording of Catch by Longline Fishing Vessels in the IOTC Area* para. 1 and 2.

¹³⁵ *UN Fish Stocks Agreement*, Annex I, Art. 1(1) states that: Data collected should also include information on non-target and associated or dependent species; Annex 1, Art. 3(1)(b) –States shall collect and make available to the relevant subregional or regional fisheries management organisation or arrangement the following types of data in sufficient detail to facilitate effective stock assessment in accordance with agreed procedures: b) total catch in number, nominal weight, or both, by species (both target and non-target) as is appropriate for each fishery.

¹³⁶ *UN Fish Stocks Agreement*, Article 6(3)(d).

The IOTC has adopted measures in respect of marine turtles, seabirds and sharks. For marine turtles, the Commission requires that Contracting Parties and CPCs submit to the Scientific Committee, data on numbers of animals caught. In this regard, CPCs are required to collect (including through logbooks and observer programs) and provide to the Scientific Committee all data on their vessels' interactions with marine turtles in fisheries targeting the species covered by the IOTC Agreement.¹³⁷ The IOTC encourages CPCs to collect and voluntarily provide the Scientific Committee with all available information on interactions with seabirds, including incidental catches in all fisheries under the purview of the IOTC.¹³⁸

In the case of sharks, the IOTC requires CPCs to submit data on catches of sharks on an annual basis, and in accordance with IOTC data collecting procedures, including historical data.¹³⁹ Thus, the IOTC requires catch, effort and size data on sharks to be submitted in accordance with the IOTC data reporting procedures.¹⁴⁰

4.2.2.3 Data on Vessel Characteristics

The information on vessel characteristics and operations in the fishery is also significant for tuna management. Under the UN Fish Stocks Agreement, flag States are obliged to establish a national record of fishing vessels authorised to fish on the high seas and to share the information as required.¹⁴¹ As established in the previously in chapter 2(2.5.2), the UN Fish Stocks Agreement specifies the types of data that States should collect.¹⁴²

The IOTC maintains a record of vessels authorised to fish in the IOTC Area and requires them to submit information relevant to their characteristics, vessel monitoring system (VMS) programme activities, and transshipment activities. In respect of vessel characteristics, all CPCs are required to submit to the secretary, records of foreign flag vessels licensed to fish within the IOTC Area of Competence including information on,

¹³⁷ IOTC, Resolution 09/06, *On Marine Turtles*, para 2.

¹³⁸ IOTC, Recommendation 05/09, *On Incidental Mortality of Seabirds*, para 2.

¹³⁹ IOTC, Resolution 05/05, *On Incidental Mortality of Seabirds*, para 1.

¹⁴⁰ IOTC, Resolution 10/02, *Mandatory statistical requirements for IOTC Members and Cooperating non-Contracting Parties*, para 3(c).

¹⁴¹ *UN Fish Stocks Agreement*, Art. 18(3)(c).

¹⁴² *UN Fish Stocks Agreement*, Annex I, Art.4.

inter alia, the IOTC number; name and registration number; the flag at the time of issuing the license; the main target species; and period of license.¹⁴³

Concerning the VMS programme, each Contracting party and CPC is required to adopt a vessel monitoring system for all vessels greater than 15 metres registered in the IOTC record of vessels.¹⁴⁴ The IOTC also requires all transshipments to take place in port unless otherwise authorised, and establishes a programme to monitor transshipment at sea and also a record of vessels authorised to receive transshipments at sea in the IOTC Area.¹⁴⁵ The IOTC also shares data and maintains confidentiality as required under international law. A certain level of data on Indian Ocean tuna fisheries has become more accessible through the IOTC website. However, the catch of individual vessels is not to be identified within a time/area stratum, and where an individual vessel can be identified, the data has to be aggregated by time, area or flag to preclude such identification before it is available in public domain.¹⁴⁶ Otherwise, catch-and-effort and length-and-frequency data of a finer level can only be released upon written authorisation of the data sources and with the permission of the secretary to IOTC.¹⁴⁷ The IOTC also provides for the safeguard of records and databases.¹⁴⁸

4.2.2.4 Constraints to Data Contribution

Despite the fact that the IOTC has adopted elaborate measures specifying the format and timeframe for submission of tuna fisheries data, many of the Members have continually failed to fulfil their data reporting obligations. The completeness and quality of data on tuna submitted by Members is a matter of deep concern for the IOTC. This issue has been discussed at various Commission sessions in the last ten years. Not only is the quality and timeliness of such data essential for decision making but the stock assessment capabilities of the secretariat are also reliant upon it.

¹⁴³ IOTC Resolution 10/07, *Concerning a Record of Licensed Foreign Vessels fishing for Tunas and Swordfish in the IOTC Area*, para. 1 and 2; Resolution 10/08, *Concerning a Record of Active Vessels Fishing for Tuna and Swordfish in the IOTC Area*, para1, Contracting Parties and CPCs shall submit to the secretary, records of vessels greater than 24 m vessel length overall (LOA) and those less than 24 m LOA that have fished in IOTC area of competence and outside their EEZ respectively.

¹⁴⁴ IOTC, Resolution 06/03, *On establishing a Vessel Monitoring System Programme*.

¹⁴⁵ IOTC, Resolution 08/02, *On Establishing a Programme for Transshipment by Large-Scale Fishing Vessels*, Section 1, 2 and 3.

¹⁴⁶ IOTC, Resolution 98/02, *Data Confidentiality Policy and Procedures*, para 2.

¹⁴⁷ IOTC, Resolution 98/02, *Data Confidentiality Policy and Procedures*, para 3.

¹⁴⁸ IOTC, Resolution 98/02, *Data Confidentiality Policy and Procedures*.

According to reports of the IOTC Scientific Committee the quality and timeliness of data from fishing fleets are affected by several factors. These include ‘late reporting, absence of catch series from vessels known to be operating in the region, uncertain catch reports (including large longliners from Seychelles), and lack of catch and effort information for non-reporting longline and purse seine fleets’.¹⁴⁹ Additionally, the limited statistical systems of many Indian Ocean coastal States limit their ability to provide the quality data required for stock assessment by the IOTC working parties.¹⁵⁰ The quality of data is further compounded by the fact that more than 50% of the total catch of IOTC species is taken by the artisanal fishery whose catch estimates are not very reliable.¹⁵¹ As a result, there are significant gaps and errors in the provision of data to the IOTC.

The data for all non-target species also remains uncertain, incomplete or unavailable. This makes it difficult for bycatch levels to be estimated. Consequently, the IOTC’s efforts to effectively mitigate the impact of tuna fisheries on bycatch are restrained. For example, in spite of a few IOTC Members developing National Plans of Action on sharks,¹⁵² it has been difficult to obtain shark bycatch data by species, and only South Africa and the EC have submitted detailed statistics on sharks since the fourth session of the WPEB in 2008.¹⁵³ For this reason the WPEB has recommended steps to be taken to improve the state of data on these species as a priority over the existing data reporting specifications of the IOTC.¹⁵⁴ On ecosystem approaches, the

¹⁴⁹ IOTC, *Report of the Seventh Session of the Scientific Committee*, Victoria, Seychelles, 8-12 November 2004; IOTC, *Report of the Eighth Session of the Scientific Committee*, Victoria, Seychelles, 7-11 November 2005; IOTC, *Report of the Twelfth Session of Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009.

¹⁵⁰ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008.

¹⁵¹ IOTC, *Report of the IOTC Performance Review Panel*: January 2009.

¹⁵² IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya, 12-14 October 2009. These members include Australia, EC, Japan, Kenya, Korea, La Reunion (France), Malaysia, Philippines, Seychelles, South Africa and Taiwan.

¹⁵³ IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya, 12-14 October 2009. No catches of sharks have been reported from the longline and gillnet fishing fleets. No historical data series fundamental for stock assessments has been submitted. Biological data such as fin-body ratio by species are missing.

¹⁵⁴ IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya, 12-14 October 2009.

WPEB encourages more work on ecological risk assessment analysis to aid in quantitative stock assessment for bycatch species in data-poor conditions.¹⁵⁵

In respect of seabirds and turtles, data collected by observers has been submitted only by South Africa for vessels operating in its EEZ, while the EC has reported turtle bycatch by its purse seine fleet.¹⁵⁶ The shortfalls in data remittance impede the work of the IOTC working parties and distort the assessment of tuna stocks in the region.¹⁵⁷ Generally, when data is overly delayed, it can neither be authenticated nor verified and this compromises its utility and reliability.¹⁵⁸ Consequently, the IOTC is limited in the quality of management advice that can be provided to its members. The late submission of data is also contrary to the requirements of the UN Fish Stocks Agreement.¹⁵⁹ Nevertheless, the problem of data quality and late submission is not unique to the IOTC. Data issues have emerged as a matter of concern across all RFMOs. These issues were also highlighted during the UN Fish Stocks Agreement review Conferences (2006 and 2010),¹⁶⁰ and the Joint Tuna RFMO meeting of 2007.¹⁶¹

As the contribution of data has been inconsistent and inadequate, the reduced data quality and low levels of reporting have reduced the quality of stock assessment for most of the IOTC species.¹⁶² In some cases the statistical data has been incomplete,¹⁶³

¹⁵⁵ IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya, 12-14 October 2009.

¹⁵⁶ IOTC, *Report of the Fifth Session of the IOTC Working Party on Ecosystems and Bycatch*, Mombasa, Kenya 12-14 October 2009.

¹⁵⁷ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008. Both skipjack and yellowfin stocks have been affected.

¹⁵⁸ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008.

¹⁵⁹ *UN Fish Stocks Agreement*, Art. 5(j) requires states to collect and share data in a timely manner.

¹⁶⁰ Outcome of the resumed Review Conference on the *UN Fish Stocks Agreement*, para 6c. The Conference recommended that States and regional economic integration organisations individually and collectively through RFMOs should comply with their obligations as members or cooperating non-members of RFMOs to submit timely, complete and accurate fisheries data; Create incentives to promote compliance with those obligations and take steps to address persistent failure to fulfil those obligations. http://pfcmc.com/Depts/los/convention_agreements/ (accessed 8 September 2010).

¹⁶¹ Report of the Joint Meeting of Tuna RFMOs, January 22-26 2007, Kobe, Japan. <http://www.tuna-org.org> (accessed 8 September 2010).

¹⁶² IOTC, *Report of the Twelfth Session of IOTC*, Muscat, Oman, 7-11 June 2008.

¹⁶³ IOTC, *Report of the Twelfth Session of IOTC*, Muscat, Oman, 7-11 June 2008. Size and frequency data notably missing from many Members' data sets. Nominal catches data were even lower in 2008 compared to the previous year.

and the mandatory deadlines have not been met.¹⁶⁴ In addition, the attendance at the meetings of the technical working parties and the Scientific Committee has been poor and national reports late.¹⁶⁵ Participation in these meetings is fundamental to the quality of scientific knowledge which underpins the management advice provided to the Commission. Member input is also essential and it will often cultivate more commitment and support to the decisions made at such meetings because of their investment in the process. It is essential that Members participate in these meetings if the management decisions of the IOTC are to be informed by the best scientific advice available.

The problem of non-attendance in technical meetings and the Scientific Committee may be due to multiple factors. First, most developing States are constrained financially. Secondly, some of these States may not have the appropriate expertise to participate meaningfully in these meetings.¹⁶⁶ The Commission has made progress towards establishing a fund for support to scientists from developing States to participate in technical meetings.¹⁶⁷ This may have been as a result of the recommendations made by the Performance Review Panel in 2009. Since adequate funding is critical to facilitate developing States in the attendance of technical meetings, the Commission needs to ensure the sustenance of the fund it has established for this purpose. At present, it is not clear if the available resources are adequate or how a long-term funding will be achieved.

¹⁶⁴ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008; *Report of the Twelfth Session of IOTC*, Muscat, Oman, 7-11 June 2008; *Report of the Twelfth Session of Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009. In 2007, only 15 Members had submitted data before the June 30 deadline. Requests had been sent to over 50 Countries between March-April 2008. In most cases 2nd and 3rd requests were needed.

¹⁶⁵ IOTC, *Report of the Eleventh Session of the Scientific Committee*, Victoria, Seychelles, 1-5 December 2008- At this meeting, only 11 out of 31 Members were represented and 11 national reports were submitted; IOTC, *Report of the Twelfth Session of Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009- only 14 out of 31 Members were in attendance and 15 national reports submitted.

¹⁶⁶ Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 33.

¹⁶⁷ IOTC, *Resolution 10/05, On the Establishment of a Meeting Participation Fund for Developing IOTC Members and Non-Contracting Cooperating Parties*.

4.2.2.5 Shortcomings of IOTC Requirements on Data Provision

There is a need for the Commission to enforce its data submission requirements. Despite the failure by Members to meet their obligations with respect to the Commission's data submission requirements and deadlines, no penalties have been imposed on the offenders. Instead, the Commission has only made mention of its intention to consider imposing sanctions on such offenders in the future.¹⁶⁸ This is not sufficient to encourage Members to comply with relevant measures. The Commission may need to consider the establishment of penalties which can be applied in cases where States are in contravention of IOTC data submission requirements, thereby deterring would be offenders. Alternatively, the Commission could consider incentives that would encourage States to submit their data. The Pew Environmental Group has recommended to the recent UN Fish Stocks Review Conference that, RFMOs should adopt a "No data-No Fishing" approach in response to insufficient information about the state of target and associated and dependent species. The Pew Environmental Group suggests that any member State that fails to submit information on its fishing activities should be prohibited from fishing.¹⁶⁹

Although the approach proposed by PEW could be applied to developed States, it may prove impossible to apply in the case of developing States whose financial, technical and human resources are limited. There is a need for the IOTC not only to identify the underlying causes of untimely and inaccurate data submission by States, but also to enhance their capacities and develop their capabilities in the areas of collecting, processing and collating tuna fisheries data. Nonetheless, the IOTC has started making efforts to support developing coastal States in improving their statistical systems through cooperation with the Overseas Fishery Cooperation Foundation of Japan. Since 2002 the IOTC has been implementing a capacity building project which aims to assist developing States from the region to enhance their capacities in fisheries data collection and statistics. The project which is being funded by Overseas Fishery Cooperation

¹⁶⁸ IOTC, *Report of the Twelfth Session of the Indian Ocean Tuna Commission*, Muscat, Oman, 7-11 June 2008.

¹⁶⁹ The Pew Environmental Group, *Finding Sustainability: Recommendations to the UN Fish Stocks Review Conference* (Pew, 2010)4.

Foundation has contributed immensely to improved quality of data.¹⁷⁰ The Indian Ocean Tuna Tagging programme has also contributed to improved data quality.

An initiative such as the Overseas Fishery Cooperation Foundation cannot be sustained without an assurance of sufficient funding, neither can it assist all the deserving States. It calls for efforts on the part of the IOTC to locate sustainable sources of funding.¹⁷¹ It is necessary for the Commission to develop a long term funding strategy towards the achievement of sustained quality of tuna fisheries data in the Indian Ocean. Following the recommendations of the Performance Review Panel, the Commission has reinstated the Working Party on Data Collection and Statistics whose role is to address the technical statistical issues.

As demonstrated, the IOTC is faced with uncertainty in relation to the status of tuna stocks under its mandate and also the non-target species. Under such circumstances when knowledge is limited, the Commission needs to take precautionary measures. The UN Fish Stocks Agreement requires States to apply the precautionary approach in the face of uncertainty.¹⁷² The FAO Code of Conduct for Responsible Fisheries echoes the UN Fish Stocks Agreement on this aspect of fisheries management.¹⁷³ States are therefore required to take conservation and management measures even in the absence of adequate scientific information by applying the guidelines set out in Annex II of the UN Fish Stocks Agreement. States are required to determine stock-specific reference points and the action to be taken if they are exceeded.¹⁷⁴ By applying the precautionary

¹⁷⁰ IOTC, 'Progress Report on the IOTC-OFCF Project to Improve Statistical Systems in Indian Ocean Coastal Countries'- Seventh Session of the Scientific Committee, Mahe, Seychelles, 8-12 November 2004 (IOTC-2004-SC-03); Progress Report on the IOTC-OFCF Project to Improve Statistical Systems in Indian Ocean Coastal Countries- IOTC-2007-SC-INF08. The first phase of the project commenced in 2002 with an annual funding of US\$500,000. A second 3 year phase followed upon termination of phase I in 2007. Priority was given 'to countries whose tuna fisheries are a sufficient size to affect stock assessments or future management measures, those who catch fish at sizes not well represented from other fisheries. Some of the Beneficiaries were: Indonesia, Kenya, Tanzania, Oman Sri Lanka, Yemen, India, Thailand, Malaysia and South Africa.

¹⁷¹ IOTC, *Report of the Twelfth Session of the Indian Ocean tuna Commission*, Muscat, Oman, 7-11 June 2008. The scientific committee is making efforts to encourage Japan for continued funding assistance towards the project which comes to and end in March 2010.

¹⁷² *UN Fish Stocks Agreement*, Art. 6.

¹⁷³ *FAO Code of Conduct for Responsible Fisheries*, Art. 7.5.

¹⁷⁴ *UN Fish Stocks Agreement*, Arts. 6(2) and (3)(b).

approach, States are able to address fisheries management problems proactively, thereby ensuring the sustainability of fisheries resources and associated ecosystems.¹⁷⁵

Although the IOTC has adopted resolutions and made recommendations that are consistent with the precautionary approach, the IOTC Agreement does not provide for this concept. Contrary to the requirement by the UN Fish Stocks Agreement, the IOTC has not developed a fisheries management structure that precisely incorporates the precautionary approach into its decision making. The requirement of the UN Fish Stocks Agreement is consistent with the recent report on recommended best practices for RFMOs which recommends that members of RFMOs, in recognition of the role of uncertainty in fisheries resource management, should ensure that the precautionary approach to resource management is an integral part of their convention or decision-making process.¹⁷⁶

The IATTC, for example is required to apply the precautionary approach under the Antigua Convention and the Agreement on the International Dolphin Conservation Programme.¹⁷⁷ The Agreement on the International Dolphin Conservation Programme has broad implications for the precautionary approach and ecosystem-based management.¹⁷⁸ The IATTC applies the precautionary approach in the determination of its fisheries conservation measures, capacity controls and bycatch restrictions,¹⁷⁹ and has established a working group on reference points in this regard.¹⁸⁰

¹⁷⁵ Restrepo *et al*, 'Technical guidance on the use of precautionary approaches to implementing national standard 1 of the Magnuson- Stevens Fishery Conservation and Management Act (2003)' in A new role for MSY in single species and ecosystem approaches to fisheries stock assessment and management' (2001) *Fish and Fisheries* 2, 2.

¹⁷⁶ Lodge *et al*, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 117.

¹⁷⁷ *The Antigua Convention*, Article IV; Agreement on the International Dolphin Conservation Program, Article IV.

¹⁷⁸ Marjorie L Mooney Seus and Andrew A Rosenberg, *Regional Fisheries Management Organisations: Progress in Adopting Precautionary Approach and Ecosystem-based Management* (2007). <http://www.closingthenet.info> (accessed 10 January 2010).

¹⁷⁹ Ibid.

¹⁸⁰ UN General Assembly, *Report submitted in accordance with paragraph 17 of General Assembly resolution 59/25, to assist the Review Conference to implement its mandate under paragraph 2, article 36 of the United Nations Fish Stocks Agreement Report of the Secretary-General*. Review Conference on the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. New York, 22 to 26 May 2006. A/CONF.210/2006/1(2006) 31.

Whereas the IOTC has adopted measures addressing some of the relevant provisions of the LOSC and the UN Fish Stocks Agreement, the IOTC Agreement has not incorporated some of the modern principles of fisheries management in these instruments. The report of the performance review views this flaw in the IOTC Agreement as a potential hindrance to the IOTC's effectiveness and efficiency in delivering its mandate.¹⁸¹ In spite of this flaws that the IOTC Agreement may have, the delivery of the IOTC mandate is reliant upon the political will of its Members. In as much as States may have diverse national interests and economic priorities they need to have a collective approach towards the achievement of the conservation objectives of the IOTC. The onus is upon the Members to participate in the work of the IOTC by making decisions that will ensure the long-term sustainability of the tuna resources under the management mandate of the IOTC and by adhering to the resolutions and recommendations that they have agreed upon. In the words of Satya Nandan; “.....it is these States that must bear the primary responsibility of the failure of RFMOs to achieve conservation objectives. The RFMO is only the vehicle by which its Members reach collective decisions”.¹⁸²

In recent years, there have been growing concerns about the performance of RFMOs within the international community. These concerns have been raised in relation to the role of RFMOs in ensuring the long-term sustainable use and conservation of the world tuna stocks. In an effort to improve the conservation and management of tuna stocks globally, the international community has focused on the need to strengthen RFMOs in order to enhance their capabilities in fulfilling their obligations under the LOSC and the UN Fish Stocks Agreement.

To this end, the UN Fish Stocks Review Conference has made recommendations directed towards the efficient operation of RFMOs through the establishment of appropriate conservation and management measures. These recommendations include, *inter alia*, modernising the constitutive instruments of RFMOs, their mandates and practices, as well as reviewing their performance against emerging standards, in conformity with the recommendations of the UN Fish Stocks Review Conference in

¹⁸¹ IOTC, Anonymous, *Report of the IOTC performance review panel*, 2009. It is suggested that the IOTC Agreement be amended or replaced by a new instrument if the objectives of the Commission are to be achieved..

¹⁸² Statement of Satya Nandan to the Resumed Session of the UN Fish Stocks Review Conference, New York 24-28 May 2010. <http://www.wcpfc.int> (accessed 9 September 2010).

2006.¹⁸³ Other important developments towards strengthening RFMOs include the establishment of guidance for best practices in RFMOs,¹⁸⁴ and development of coordinated measures which has been brought about by cooperation between RFMOs initiated through the Kobe process.¹⁸⁵ Following the recommendations of the UN Fish Stocks Review Conference, the IOTC has undergone a performance review. As a result, the Commission has adopted several measures following the recommendations of the performance review including through increased cooperation resulting from the Kobe meetings.¹⁸⁶

While the goals and operations of RFMOs may be relatively clear, undertaking the necessary changes is not always straightforward.¹⁸⁷ The momentum for change in RFMOs can be generated by having a common agreed starting point for reform in terms of principles, processes and objectives.¹⁸⁸ In relation to the role of States Members of RFMOs, the UN Fish Stocks Review Conference in 2010 emphasised that the obligation to comply with management measures of RFMOs rested on States Members themselves and that these Members ultimately bore primary responsibility for the failure of RFMOs to achieve conservation objectives.¹⁸⁹

The compliance and enforcement measures adopted by the IOTC are examined in the following sub-section. These include flag State duties, port State measures, and a number of measures concerning monitoring, control and surveillance.

¹⁸³ Report of the Resumed Review Conference on the UN Fish Stocks Agreement, New York, 24-28 May 2010- A Conf.210/2010.

¹⁸⁴ See, Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 76.; A Willock and M Lack, *Follow the Leader: Learning from Experience and Best Practice in Regional Fisheries Management Organisations*. (WWF International and TRAFFIC International, 2006).

¹⁸⁵ The Kobe Process of cooperation began with a meeting of the five tuna RFMOs in Kobe, Japan in 2007. Cooperation has been carried out to harmonize catch documents and vessel registries, combat IUU fishing, coordinate observer programs for transshipment and provide relevant information through common websites like www.tuna-org.org. See Review 2010 para 80.

¹⁸⁶ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009).

¹⁸⁷ OECD, *Strengthening Regional Fisheries Management Organisations*, (OECD, 2009) 20.

¹⁸⁸ OECD, *Strengthening Regional Fisheries Management Organisations*, (OECD, 2009) 21.

¹⁸⁹ Report of the Resumed Review Conference on the UN Fish Stocks Agreement, New York, 24-28 May 2010- A Conf.210/2010.

4.2.3 Compliance and Enforcement

The long term sustainability of tuna stocks under the management mandate of the IOTC is reliant upon the implementation of the conservation and management measures adopted by its Members. Individual fishing vessels must also comply with these measures if the conservation objectives of the IOTC are to be achieved. Effective enforcement of these measures is equally fundamental to the achievement of the Commission's conservation objectives. These efforts require the support of an adequate monitoring, control and surveillance (MCS) mechanism.

Article 73 of the LOSC confers upon the coastal State a right to take the necessary measures, including boarding, inspection, arrest, and judicial proceedings, to ensure compliance with laws and regulations adopted in respect of the EEZ. On the high seas, States have a duty to take, or cooperate with other States in taking, measures for their respective nationals for the conservation of resources.¹⁹⁰ Under the UN Fish Stocks Agreement States are required to cooperate to ensure compliance with and enforcement of [RFMO] conservation and management measures for [tuna] stocks.¹⁹¹ In this respect, flag States are obligated to ensure compliance with RFMO conservation and management measures by vessels flying their flags.¹⁹² Thus, flag States are required to implement measures in this regard. The compliance and enforcement obligations of flag States are provided in Article 19 of the UN Fish Stocks Agreement.

As established in chapter 2(2.5.4), port States can also exercise jurisdiction on vessels calling at their ports.¹⁹³ The central role assumed by port State measures in supporting the long-term sustainability objectives and governance of tuna fisheries has increasingly been recognised internationally. These measures have become instrumental especially in Combating IUU fishing activities. Also fundamental to the enforcement of RFMO conservation measures is effective monitoring, control and surveillance (MCS).¹⁹⁴ The measures that the IOTC has adopted in relation to these aspects are discussed further in the sections that follow.

¹⁹⁰ LOSC, Art. 117.

¹⁹¹ UN Fish Stocks Agreement, Art. 20(1).

¹⁹² UN Fish Stocks Agreement, Art. 18(1).

¹⁹³ LOSC, Art. 25(2); UN Fish Stocks Agreement, Art. 23(1).

¹⁹⁴ UN Fish Stocks Agreement, Arts. 5(1), 10(h), 18, and 19.

4.2.3.1 Flag State Duties

The concept of flag State duties is fundamental to the effectiveness of international fisheries instruments. A requirement of the UN Fish Stocks Agreement concerning flag States is the establishment of a national record of fishing vessels authorised to fish on the high seas and provision of access to the information contained in that record on request by directly interested States in conformity with flag State laws.¹⁹⁵ As a means of controlling the activities of such vessels on the high seas, flag States shall require them to carry fishing licenses, authorisations or permits on board.¹⁹⁶ Flag States are also required to mark fishing vessels and fishing gear for identification in conformity with international standards.¹⁹⁷ Although the IOTC Agreement does not reflect flag State measures, the IOTC has adopted measures consistent with these requirements. In this regard, the IOTC has adopted a resolution requiring the establishment and maintenance of a record of vessels that are authorised to fish for tuna and tuna-like species in the IOTC Area (hereinafter referred to as AFVs).¹⁹⁸ Vessel records are essential for the Commission to establish its fishing capacity goals.

AFVs not entered in the record are deemed not to be authorised to fish for, retain on board, tranship or land tuna and tuna-like species.¹⁹⁹ The flag CPCs are to authorise AFVs to operate in the IOTC Area only if they can fulfil the requirements and responsibilities under the IOTC Agreement, ensure the AFVs comply with the conservation and management measures of the Commission and ensure that such AFVs have no history of IUU fishing activities.²⁰⁰ In addition, CPCs are required to take measures, under their applicable legislation to prohibit the fishing for, the retaining on board, the transshipment and landing of tuna and tuna-like species by AFVs which are not entered into the IOTC record.²⁰¹ CPCs are also required to notify the Secretary of any factual information showing that there are reasonable grounds for suspecting AFVs

¹⁹⁵ *UN Fish Stocks Agreement*, Art. 18(3)(c).

¹⁹⁶ *UN Fish Stocks Agreement*, Art. 18(3)(b)(iii).

¹⁹⁷ *UN Fish Stocks Agreement*, Art. 18(3)(d).

¹⁹⁸ IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*.

¹⁹⁹ IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*, para 1.

²⁰⁰ IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*, para 5.

²⁰¹ IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*, para 7.

not on the IOTC record to be engaged in fishing for and/or transshipment of tuna and tuna-like species in the IOTC Area.²⁰²

Concerning authorisation of fishing and vessel identification, the IOTC has adopted Resolution 01/02 '*Relating to Control of Fishing Activity*', requiring fishing vessels to carry on board documents issued and certified by the competent authority in respect of authorization to fish, vessel name, port in which registered and number of registration, international call sign, names and addresses of owner, length and engine power of vessel.²⁰³ Fishing vessels should also be appropriately marked in conformity with international standards such as the *FAO Standard Specification for the Marking and identification of Fishing Vessels* as well as gears.²⁰⁴ Fishing vessels are also required to keep a bound fishing logbook.²⁰⁵

The Compliance level of Member States in regard to some aspects of Resolution 07/02 is a matter of concern to the Commission. In particular, authorised vessel records do not contain the time period that the vessels are authorised for fishing or transshipping even though it is a requirement. Vessel volume must also be reported as Gross Tonnage (GT) and not GRT as practised by some Member States.²⁰⁶

4.2.3.2 Port State Measures

There is increasing international recognition of the value of port State control in fishery conservation and management.²⁰⁷ The scope of port State measures can complement other instruments in ensuring compliance with established conservation and management measures for tuna.²⁰⁸ The LOSC confirms the right of port States over their ports. Pursuant to Article 25(2) of the LOSC, port States can take necessary steps to prevent any breach of the conditions to which a port call is subject. Further, according to Article 218 of the *LOSC*, port States may undertake investigations or

²⁰² IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*, para 8.

²⁰³ IOTC, Resolution 01/02, '*Relating to Control of Fishing Activity*', para. 2.

²⁰⁴ IOTC, Resolution 01/02, '*Relating to Control of Fishing Activity*', para. 3 and 4.

²⁰⁵ IOTC, Resolution 01/02, '*Relating to Control of Fishing Activity*', para. 5

²⁰⁶ IOTC, Report of the Thirteenth Session, Bali, Indonesia 30 March -3 April 2009.

²⁰⁷ Terje Lobach, *Port State Control of Foreign Fishing Vessels*, FAO Fisheries Circular No. 987 (FAO, 2003)3.

²⁰⁸ Terje Lobach, *Port State Control of Foreign Fishing Vessels*, FAO Fisheries Circular No. 987 (FAO, 2003)5.

institute proceedings against vessel discharge in violation of applicable international rules. Thus, port States can take measures to ensure vessel compliance in relation to port access. The UN Fish Stocks Agreement augments these rights and duty of port States and gives discretion to States over fishing vessels calling into their ports. Thus, in Article 23(1), the UN Fish Stocks Agreement provides the right and duty of a port State to take measures to promote the effectiveness of [RFMO] conservation and management measures. Accordingly, a port State may inspect documents, fishing gear and catch on board fishing vessels, when the vessel is in its ports or at its offshore terminals.²⁰⁹ Additionally, a port State may prohibit landings and transshipments if the catch is taken in a manner which undermines the effectiveness of conservation and management measures on the high seas.²¹⁰ The FAO Code of Conduct also requires States to take responsibility regarding port access in respect of compliance with international law.²¹¹

The IOTC Agreement has not incorporated provisions concerning the duties of Members as port States. However, the IOTC has adopted measures in this regard. Resolution 05/03 enables Contracting Parties and CPCs to inspect documents, fishing gear and catch on board fishing vessels.²¹² The resolution requires that CPCs adopt regulations to prohibit landings and transshipments that undermine the effectiveness of conservation and management measures adopted by the Commission. Thus, the flag States and the Commission are to be notified in the event of incidences of violation by foreign vessels as a result of port inspections.

The IOTC has also adopted Resolution 10/11 '*On Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*' which contains similar provisions to those of the FAO '*Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*'.²¹³ The adoption of these measures appears to have been as a result of the recommendations of

²⁰⁹ UN Fish Stocks Agreement, Art. 23(2).

²¹⁰ UN Fish Stocks Agreement, Art. 23(3).

²¹¹ FAO, Code of Conduct for Responsible Fisheries, Art. 8.3.

²¹² IOTC, Resolution 05/03, '*Relating to the Establishment of an IOTC Programme of Inspection in Port*'.

²¹³ The FAO '*Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*' is the first ever global treaty to focus on the problem of IUU fishing. It was adopted by the FAO Council on November 2009 under Article XIV of the FAO Constitution and is open for signature until 2010. The Agreement is subject to ratification, acceptance or approval by the signatories. It shall enter into force 30 days after the twenty-fifth instrument of ratification with the FAO Director General. <http://www.fao.org/> (accessed 12 September 2010).

the IOTC review.²¹⁴ Resolution 10/11 stipulates the measures to be taken in respect of entry into port; use of ports; inspections and follow up action; role of the flag State; requirements of developing States and the duties of the Commission. The requirements for entry into port include an advance request for port entry, designation of ports, decision making on port entry and issuing of authorization or denial.²¹⁵ The use of a port can be denied, pursuant to the laws and regulations of a port State and consistent with international law, that a vessel lands, transships, packages and processes fish that have not been previously landed and for other port services if, *inter alia*, the vessel is suspected to have engaged in IUU fishing or if the fish on board is taken in contravention of coastal State or RFMO requirements.²¹⁶

The inspection process involves a series of steps. These include the conduct of inspections; format of reporting results and their transmittal; training of inspectors; and actions to be taken after inspection. Where, following an inspection it is believed that a vessel has engaged in IUU fishing, it should be denied landing upon notification to the flag State, the IOTC Secretariat and other relevant organisations.²¹⁷ The IOTC is required to facilitate in building the capacity of developing States to implement the effective port State measures and also to keep an updated list of designated ports, prior notification periods of Member States and the corresponding competent authority and also transmit inspection reports to relevant RFMOs.²¹⁸

It is in the interest of IOTC Member States to address the high level of IUU fishing activities in order to avoid consumer-imposed sanctions against their exports. However, the Commission's programme of inspection in port has not facilitated the implementation of port State measures in the IOTC Area and the incidences of IUU fishing are considered high.²¹⁹ The occurrence of such incidences has been attributed to

²¹⁴ IOTC, Anonymous, *Report of the IOTC Performance Review Panel* (2009). At the time of the IOTC review, the IOTC had adopted only Resolution 05/03. The Review panel recommended that IOTC consider implementing the FAO Model Scheme on Port State Measures and also to note the outcome of the globally binding Agreement on Port State Measures.

²¹⁵ IOTC, Resolution 10/11, Part 2, para.5, 6 and 7.

²¹⁶ IOTC, Resolution 10/11, Part 3, para. 9.

²¹⁷ IOTC, Resolution 10/11, Part 4, para. 11, 12, 13, 14 and 15.

²¹⁸ IOTC, Resolution 10/11, Parts 6 and 7.

²¹⁹ FAO, *Reports of the IOC/FAO/IOTC Symposium and Workshop to Strengthen Port State Measures in the Indian Ocean*, Port Louis, Mauritius, 18-22 June 2007. The FAO symposium of 2007 addressing port State measures in the Indian Ocean called for a mechanism to implement port state measures in the region.

weak port State duties, and the lack of coordination in the region, precise port State measures and appropriate human capacity.²²⁰

It would be beneficial for the IOTC to implement the *Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated Fishing* (hereinafter the FAO Model Scheme) adopted by the FAO Committee on Fisheries.²²¹ This Scheme provides a suite of recommended international minimum port State measures, which are to be applied by RFMOs or individual port States through the adoption of regional memoranda of understanding (MOU). The implementation of a regionally or globally coordinated approach to port State control is seen as a huge deterrent to IUU operators who shift operations between ports or tranship at sea, especially because individual States are limited in the action they can take,²²² or some are unwilling to apply effective port State measures. For example, vessels on the east African coast have been known to avoid port Victoria in the Seychelles where stringent port State measures are applied, for alternative ports where controls are implemented less rigorously.²²³ The illegal fishing activities cannot be controlled unilaterally. By applying port State measures uniformly throughout the region the activities of such vessels would be much controlled.

The FAO Model Scheme has been supported by the Port State Agreement.²²⁴ The measures provided by the FAO Model Scheme include, *inter alia*, the terms and conditions for landing, procedures for inspection and actions to be taken in the event of any violations. The annexes of the FAO Model Scheme contain information to be provided prior to entry into port by foreign fishing vessels, port State inspection procedures for foreign fishing vessels, results of port State inspectors, training for port

²²⁰ FAO, *Reports of the IOC/FAO/IOTC Symposium and Workshop to Strengthen Port State Measures in the Indian Ocean*, Port Louis, Mauritius, 18-22 June 2007.

²²¹ FAO is in the process of operationalising the Model Scheme which was endorsed by COFI in 2005. A database on port State measures has also been established. In 2007, COFI endorsed the global call for a binding agreement on port State measures based on the Model Scheme and the IPOA-IUU. See <http://www.fao.org/fishery/psm> (accessed 16 March 2009).

²²² Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 54.

²²³ FAO, *Reports of the IOC/FAO/IOTC Symposium and Workshop to Strengthen Port State Measures in the Indian Ocean*, Port Louis, Mauritius, 18-22 June 2007. para 76.

²²⁴ The Agreement on Port State Measures to Prevent Deter and Eliminate Illegal, Unreported and Unregulated Fishing was approved by the FAO Conference at its Thirty-Sixth Session on 22nd November 2009. <http://www.fao.org/Legal/treaties/037s-e.htm> (accessed 7 February 2011).

State inspectors and information system on port State inspections.²²⁵ By implementing the FAO Model Scheme, the IOTC can develop an effective system of port State control and thereby revise its measures accordingly. The FAO Model Scheme provides a step by step procedure which States can take to achieve such control over IUU fishing activities. Notably, Resolution 10/11, though so elaborate has only recently come into force (March 2011). In the interim, there is a need for the Commission to improve port State control procedures. The scope of Resolution 05/03 could be expanded so that it takes into account the developments on port State measures reflected in the FAO Model Scheme. Although the implementation of such a Scheme is to be facilitated by the IOTC, the efforts of the Commission must be supported by the cooperation of Member States through the enactment of appropriate national legislation.

4.2.3.3 Monitoring, Control and Surveillance Measures

To reinforce the effective exercise of flag States' duties for fishing vessels flying their flag, States are required to implement measures related to monitoring, control and surveillance (MCS). Under the LOSC, the coastal State may, in the execution of its fisheries regulations, take various MCS measures, including boarding, inspection, arrest and judicial proceedings, to ensure compliance with its laws and regulations.²²⁶ The UN Fish Stocks Agreement obligates States to cooperate in the implementation and enforcement of [tuna] conservation and management measures through effective monitoring, control and surveillance.²²⁷

The purpose of MCS is to ensure that fisheries management measures are implemented fully in an efficient and speedy manner.²²⁸ The underpinning objective for all MCS programmes is to facilitate sustainable resource use.²²⁹ The monitoring

²²⁵ FAO, *FAO Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated fishing* (FAO 2007); FAO, *Combating Illegal, Unreported and Unregulated fishing through monitoring, control and surveillance, port State measures and other means*, COFI, FAO, Twenty seventh session, Rome, Italy, 5-9 March 2007.

²²⁶ LOSC, Art. 73(1).

²²⁷ UN Fish Stocks Agreement, Arts. 5(l), 10(h) and 18(3)(g).

²²⁸ FAO, *Essential Role of Monitoring, Control and Surveillance in Fisheries Management*, Twenty second session of the Committee on Fisheries, Rome, Italy 17-20 March 1997.

²²⁹ P Flewelling, *An Introduction to Monitoring, Control and Surveillance Systems for Capture*, FAO Fisheries Technical Paper 338 (FAO, 1994).

component of MCS entails collection, measurement and analysis of fishing activity.²³⁰ The aspect of control involves specified terms and conditions under which [tuna] resources can be harvested, usually included in national fisheries legislation.²³¹ Finally, the surveillance aspect involves regulating and supervising fisheries to ensure compliance with the fishery regulations.²³² The measures to be implemented in relation to an effective MCS system include a vessel monitoring system (VMS),²³³ an observer scheme,²³⁴ and a boarding and inspection scheme.²³⁵ Also related to MCS is transshipment and market-related measures.

4.2.3.3.1 Vessel Monitoring Systems

The vessel monitoring system (VMS) is one of the key components of an MCS program both at national and international level. As an element of MCS, the VMS plays an important role by providing information on vessel position and in monitoring the activities of fishing vessels, which are vital for improved fisheries management. Aside from being used to monitor the position of fishing vessels VMS can also be used to transmit catch and effort data to RFMOs and flag States.²³⁶ It was seen in chapter 2 that catch and effort data provide the basis for fisheries management measures. Such data,

²³⁰ Flewelling *et al*, *Recent Trends in Monitoring, Control and Surveillance Systems for Capture Fisheries*. FAO Fisheries Technical Paper No. 415. (FAO, 2002). Monitoring is defined as the continuous requirement for the measurement of fishing effort characteristics and resource yields. See, P Flewelling, *An Introduction to monitoring, control and surveillance systems for capture*, FAO Fisheries Technical Paper 338 (FAO, 1994).

²³¹ Flewelling *et al*, *Recent Trends in Monitoring, Control and Surveillance Systems for Capture Fisheries*. FAO Fisheries Technical Paper No. 415. (FAO, 2002). Control is the regulatory conditions under which the exploitation of the resource may be conducted. See, P Flewelling, *An Introduction to monitoring, control and surveillance systems for capture*, FAO Fisheries Technical Paper 338 (FAO, 1994).

²³² Flewelling *et al*, *Recent Trends in Monitoring, Control and Surveillance Systems for Capture Fisheries*. FAO Fisheries Technical Paper No. 415. (FAO, 2002). Surveillance is the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities. See, P Flewelling, *An Introduction to monitoring, control and surveillance systems for capture*, FAO Fisheries Technical Paper 338 (FAO, 1994).

²³³ LOSC, Art. 62(4)(e); *UN Fish Stocks Agreement*, Arts. 5(j) and 18(3)(g)(iii); *FAO Code of Conduct*, Art. 7.7.3.

²³⁴ LOSC, Art. 62(4)(g); *UN Fish Stocks Agreement*, Art. 18(3)(g)(ii); *FAO Code of Conduct*, Art. 8.4.3.

²³⁵ LOSC, Art. 73(1); *UN Fish Stocks Agreement*, Art. 21.

²³⁶ Lodge *et al*, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 47.

collected through VMS can be delivered to States in a timely manner, thus improving the monitoring in real time of exhaustion of quotas or total allowable catch.²³⁷

Under the LOSC, vessels of fishing States operating in the EEZ of coastal States may be required to provide specific information such as vessels positions reports.²³⁸ The UN fish stocks Agreement requires coastal States and States fishing on the high seas to collect and share, in a timely manner, complete and accurate data concerning fishing activities on vessels position,²³⁹ and to develop appropriate technologies in support of fishery conservation and management.²⁴⁰ On the high seas, flag States are required to implement vessel monitoring systems in accordance with subregional, regional and global programmes.²⁴¹ Flag States also have a duty to take measures for requirements for recording and timely reporting of vessel position,²⁴² and monitoring, control and surveillance of such vessels, their fishing operations and related activities by the development and implementation of vessel monitoring systems.²⁴³

In this respect, the IOTC has adopted Resolution 06/03 which obliges Contracting Parties and CPCs to adopt a satellite-based vessels monitoring system (VMS) for vessels greater than 15metres in length overall, registered on the IOTC Record of Vessels which operate in the IOTC Area and which fish on the high seas.²⁴⁴ CPCs are required to collect information in respect to vessel identification, current geographical position of the vessel and the date and time of the fixing of the position of the vessel.²⁴⁵ They are also required to submit an annual report to the IOTC Secretariat on the progress and implementation of the VMS programme by 30 June of each year.²⁴⁶

²³⁷ Philippe Cacaud, *Legal Issues Relating to Vessel Monitoring Systems*, Technical papers presented at the Regional Workshop on Fisheries Monitoring, Control and Surveillance Kuala Lumpur and Kuala Terengganu, Malaysia 29 June -3 July 1998.

²³⁸ LOSC, Art. 62(4)(e)

²³⁹ UN Fish Stocks Agreement, Art. 5(j).

²⁴⁰ UN Fish Stocks Agreement, Art. 5(k).

²⁴¹ UN Fish Stocks Agreement, Arts. 18(3)(g)(ii).

²⁴² UN Fish Stocks Agreement, Art. 18(3)(e).

²⁴³ UN Fish Stocks Agreement, Art. 18(3)(g)(iii).

²⁴⁴ IOTC, Resolution 06/03, 'On Establishing a Vessel Monitoring System Programme'. Resolution 06/03 superseded Resolution 02/02 which called for the adoption of a pilot satellite based VMS programme on 10% of the fishing vessels in the IOTC area and provided the mechanism for Indian Ocean developing States to build their capacity to implement the resolution.

²⁴⁵ IOTC, Resolution 06/03, para. 3.

²⁴⁶ IOTC, Resolution 06/03, para.10.

Most CPCs have not met the reporting requirements set forth in the resolution and although the secretariat has provided a VMS reporting template, very few CPCs have submitted reports.²⁴⁷ Despite the VMS being mandatory, some CPCs have not implemented it.²⁴⁸ Failure by CPCs to Implement VMS systems may undermine the effectiveness of the IOTC in detecting non-compliant fishing vessels in the IOTC Area and also in the collection of data vital for management purposes. As demonstrated in section 4.2.2, the IOTC is yet to resolve the uncertain state of tuna stocks and quality of data in the IOTC Area. VMS data can enhance the effectiveness of MCS programmes in the IOTC Area. In the South Pacific Forum Fisheries Agency (FFA) for example, VMS data is being integrated with other data such as licensing for enhanced MCS effectiveness.²⁴⁹ It is necessary that the IOTC encourage the submission of VMS reports for these purposes.

4.5.3.3.2 Observer Programmes

Observer programmes in tuna fisheries are instrumental in providing independent data on parameters important to the management of fisheries such as composition and location of catches, type of gear used and interactions with protected species.²⁵⁰ Observers on board fishing vessels generate scientific and compliance fisheries data essential for effective fisheries management.²⁵¹ Thus, RFMOs have established observer programmes as an efficient and reliable method for data collection for both target and non-target species.

States are encouraged to establish observer programmes for the purpose of documentation and to promote compliance with conservation and management measures.²⁵² The LOSC provides the right for coastal States to place observers on board

²⁴⁷ IOTC, *Report of the Fourteenth Session of the Indian Ocean tuna Commission*, Busan, Korea, 1-5 March 2010. The States with vessels on the IOTC Record of Authorized Vessels that have not submitted VMS reports include Kenya, Guinea, Iran, Philippines and Thailand.

²⁴⁸ IOTC, *Report of the Thirteenth Session of the Indian Ocean tuna Commission*, Bali, Indonesia, 30 March-03 April 2009. As of 23 February 2009, the States that had operational VMS included Australia, Belize, China, Comoros, EC, France (OT), India, Indonesia, Japan, Republic of Korea, Madagascar, Malaysia, Mauritius, Oman, Seychelles, Tanzania, UK (OT), Senegal and South Africa.

²⁴⁹ Vessel Monitoring Systems. <http://www.fao.org> (accessed 14 September 2010).

²⁵⁰ Observer Programmes, <http://www.mragasiapacific.com.au> (accessed 13 September 2010).

²⁵¹ S.L. Davies and J.E. Reynolds (eds.), *Guidelines for Developing an At-Sea Fishery Observer Programme*, FAO Fisheries Technical Paper No. 414. (FAO, 2002).

²⁵² *FAO Code of Conduct for Responsible Fisheries*, para. 8.4.3.

foreign vessels fishing in their EEZs.²⁵³ Similarly the UN Fish Stocks Agreement requires the flag State to take measures requiring vessels flying its flag to verify the catch of target and non-target species through such means as, *inter alia*, observer programmes.²⁵⁴ Flag States are also obliged to implement national observer programmes, to participate in subregional and regional observer programmes and to permit access by observers from other States to carry out functions agreed under the programmes.²⁵⁵ One of the mechanisms for verifying fisheries data is scientific observer programmes to monitor catch, effort, catch composition (target and non-target) and other details of fishing operations.²⁵⁶

Consistent with the requirements of the LOSC and UN Fish Stocks Agreement, the IOTC has established a regional observer scheme.²⁵⁷ The scheme requires at least 5% of the number of operations/sets for each gear type by the fleet of each CPC while fishing in the IOTC Area of 24 metres overall length and over, and under 24 metres if they fish outside their EEZ be covered.²⁵⁸ In addition, observers aboard purse seiners are required to monitor the catches at unloading to identify the composition of bigeye catches. This requirement does not apply to CPCs with sampling programmes.²⁵⁹

The observer scheme has the dual role of collecting data and monitoring compliance with IOTC conservation and management measures. Thus, the observer is required, *inter alia*, to observe and estimate catches in order to identify catch composition and monitor discards and by-catches and also record the gear types, mesh size, and attachments employed by the master.²⁶⁰ The IOTC observer scheme is subject to review and revision.²⁶¹ This requirement is consistent with a recent report on best practices of RFMOs which recognises the need for a review and assessment of the

²⁵³ LOSC, Art. 62(4)(g).

²⁵⁴ UN Fish Stocks Agreement, Art. 18(3)(f).

²⁵⁵ UN Fish Stocks Agreement, Art. 18(3)(g)(ii).

²⁵⁶ UN Fish Stocks Agreement, Annex I, Art. 6(b).

²⁵⁷ IOTC, Resolution 10/04, 'On a Regional Observer Scheme'. Observer programmes can be used for quantifying species composition of target species, bycatch, by-products and dead discards and also for collecting tag returns.

²⁵⁸ IOTC, Resolution 10/04, para. 2.

²⁵⁹ IOTC, Resolution 10/04, para. 3.

²⁶⁰ IOTC, Resolution 10/04, para. 10(b and c).

²⁶¹ IOTC, Resolution 10/04, para. 16.

effectiveness of observer programmes.²⁶² The Commission commits to support developing States in training the observers.²⁶³

Resolution 10/04 of the IOTC stipulates the responsibilities of the CPC with regards to the operations of observers which includes the primary responsibility to obtain qualified observers who may be nationals or non-nationals of the flag State.²⁶⁴ The CPC must also ensure that observers execute their duties competently and in a safe manner, and also provide them with food and accommodation.²⁶⁵ The vessels master must ensure that all cooperation is extended to observers to enable them to carry out their duties safely, including providing access, as required, to retained catch and catch which is intended for discard.²⁶⁶ The resolution does not however stipulate the legal status or the power of observers.

According to the recommendations for best practice regarding observer schemes, there is a need for regional observer programmes adopted by RFMOs to make these provisions considering the vulnerable position of observers (if different nationality and language from the crew) and the length of time they spend on foreign fishing vessels.²⁶⁷ Concerning their legal status, observers may be associated with the flag State of the vessel, the State of the contracting party placing the observer or the master of the vessel, each subject to different international rules and duties.²⁶⁸ This shifting status may be an impediment to observers' work. There is therefore a need for the IOTC to establish the rights and duties of observers and masters of vessels in order to ensure the effective implementation of observer schemes. The IOTC Agreement does not provide for observer programmes.

²⁶² Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 50.

²⁶³ IOTC, Resolution 10/04, para. 14.

²⁶⁴ IOTC, Resolution 10/04, para. 5(a).

²⁶⁵ IOTC, Resolution 10/04, para. 5(e).

²⁶⁶ IOTC, Resolution 10/04, para. 5(e).

²⁶⁷ Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 50.

²⁶⁸ Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 50.

4.5.3.3.3 Boarding and Inspection

The need for effective MCS programs with boarding and inspection regimes to ensure compliance with conservation and management measures have been on the international agenda on fisheries management for a long time.²⁶⁹ A number of international legal and regulatory instruments have been promulgated in the last two decades requiring the implementation of a high seas boarding and inspection regime in an effort to address activities that undermine the fisheries conservation and management measures adopted by States.²⁷⁰

Vessels inspections carried out in port or at sea examine documents, fishing gear and catch on board.²⁷¹ The LOSC in Article 73(1) provides the right for coastal States to take such measures such as boarding and inspection in exercising its right in enforcing its laws and regulations. The UN Fish Stocks Agreement provides for more definitive requirements for a high seas boarding and inspection regime to be achieved through RFMOs. In accordance with Article 20(6) of the UN Fish Stocks Agreement, flag States may authorise the authorities of a coastal State to board and inspect a vessel on the high sea that may have engaged in unauthorised fishing of [tuna stocks] within the coastal State's EEZ. More specifically, Article 21(1) of the UN Fish Stocks Agreement provides the right for RFMO Member States to board and inspect fishing vessels of another State Party regardless of whether it is a Member State of that RFMO. Moreover, any organisation or arrangement that has not established boarding and inspection procedures two years after the adoption of the Agreement, subsequent enforcement action may be conducted according to Article 22 of the UN Fish Stocks Agreement.²⁷²

States' rights to board and inspect fishing vessels are limited to the inspection of vessels, licences, gear, equipment, records, facilities, fish and fish products and any other documents necessary to verify compliance with the relevant conservation and management measures.²⁷³ The inspecting State is required to notify the flag State of any violation, if there are clear grounds for believing that a vessel has engaged in any

²⁶⁹ Eugene Proulx, *High Seas Boarding and Inspection of Vessels: A Discussion of Goals, Comparison of Existing Schemes and Draft Language*, FAO Legal Papers Online No. 33 (FAO, 2003) 1.

²⁷⁰ Ibid 2.

²⁷¹ Philippe Cacaud, *Fisheries Laws and Regulations in the Mediterranean: A Comparative Study*. Studies and Reviews. General Fisheries Commission for the Mediterranean. No. 75 (FAO, 2005).

²⁷² *UN Fish Stocks Agreement*, Art. 21(3).

²⁷³ *UN Fish Stocks Agreement*, Art. 22(2).

activity contrary to the conservation and management measures of an RFMO.²⁷⁴ Investigations will follow and if evidence so warrants, enforcement action will be taken with respect to the vessel accordingly.²⁷⁵ Flag States are obligated to ensure that vessel masters cooperate with and assist in the inspection of the vessel conducted.²⁷⁶

Contrary to the provisions of international fisheries law, the IOTC has not established a boarding and inspection scheme. The result of the failure to implement such a scheme as part of the conservation and management measures for tuna stocks in the IOTC Area, is that it leaves a lacuna in the IOTC's compliance and enforcement capabilities. Consequently, this curtails the Commission's ability to detect non-compliance by fishing vessels with its conservation and management measures. The ability to detect non-compliance would enable the IOTC to gain better information for stock assessment and to target compliance responses.²⁷⁷ There is a need for the IOTC to establish a boarding and inspection scheme to enhance its ability to detect and respond to infringements.

4.5.3.3.4 Regulating Transshipment

The regulation of transshipment has become an important tool in the fight against IUU fishing and for collecting and verifying data.²⁷⁸ Laundering of tuna catches by IUU vessels is carried out through transshipments at sea by transferring such catches to reefers. By so doing, such vessels avoid being detected as they do not enter ports of RFMO Member States. The regulation of transshipment therefore calls for international cooperation among States. Thus, RFMOs have established schemes that restrict transshipments.

The UN Fish Stocks Agreement in Article 18(f) requires flag States to take measures that require verification of the catch of target and non-target species through

²⁷⁴ *UN Fish Stocks Agreement*, Art. 21(5).

²⁷⁵ *UN Fish Stocks Agreement*, Art. 21(6).

²⁷⁶ *UN Fish Stocks Agreement*, Art. 22(3).

²⁷⁷ A Willock and M Lack, *Follow the Leader: Learning from Experience and Best Practice in Regional Fisheries Management Organisations*. (WWF International and TRAFFIC International, 2006).

²⁷⁸ Lodge et al, *Recommended Best Practices for Regional Fisheries Management Organisations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organisations* (London, United Kingdom: The Royal Institute of International Affairs, Chatham House, 2007) 52.

such means as supervision of transshipment. Further, it obliges flag States to regulate transshipment on the high seas to ensure that the effectiveness of conservation and management measures is not undermined.²⁷⁹ Additionally, it provides States the right to adopt regulations empowering the relevant national authorities to prohibit landings and transshipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of [RFMO] conservation and management measures on the high seas.²⁸⁰ The verification of data may also be made from transshipment reports.²⁸¹

Consistent with the UN Fish Stocks Agreement, the IOTC has adopted Resolution 08/02 '*On Establishing a Programme for Transshipment by Large-scale Fishing Vessels*' which restricts transshipments in the IOTC Area and establishes conditions for at-sea transshipments such as flag States authorisation²⁸² and regional observer programme.²⁸³ The transshipment programme involves large scale tuna-longline vessels and carrier vessels authorised to receive transshipments from these vessels at sea, all maintained in the IOTC Record of Authorised vessels, and available in public domain. Only large scale tuna vessels that participate in the IOTC regional observer programme can authorise transshipments at sea. Such vessels will have obtained prior approval from their flag State by notification at least 24 hours in advance.²⁸⁴ All other transshipment activities of tuna and tuna-like species must take place in port.²⁸⁵ In-port transshipment can only be effected after the relevant information has been submitted and a 48 hours notice given to the port State authorities.²⁸⁶

4.5.3.3.5 Market- Related Measures

In order to avert the marketing of fish taken in contravention of the IOTC measures, the Commission can monitor trade flows and landings through trade and market-related measures. The IOTC has established a bigeye tuna statistical document

²⁷⁹ UN Fish Stocks Agreement, Art. 18(h).

²⁸⁰ UN Fish Stocks Agreement, Art. 23(3).

²⁸¹ UN Fish Stocks Agreement, Art. Annex I, Art. 6(c).

²⁸² IOTC, Resolution 08/02, para. 11 and 12.

²⁸³ IOTC, Resolution 08/02, para. 16 and 17.

²⁸⁴ IOTC, Resolution 08/02, para. 11 and 12.

²⁸⁵ IOTC, Resolution 08/02, para 1.

²⁸⁶ IOTC, Resolution 08/02, Annex 1, para. 2.

scheme for frozen bigeye for the purpose of monitoring trade.²⁸⁷ Under this scheme which aims to enhance the sustainability of bigeye, the IOTC can quantify bigeye catches and identify IUU vessels.²⁸⁸ All bigeye imports by parties have to be accompanied by a statistical document to be authenticated by the flag State together with prior authorisation for at-sea or in-port transshipments.²⁸⁹ The trade data for bigeye is envisaged to address issues of uncertainty with regards to bigeye tuna catch and also to detect IUU fishing activities in the IOTC Area. For this scheme to be more effective, it would be beneficial for the Commission to include other forms of bigeye (fresh) and at all stages including processing, trading and marketing. This would enhance the trade data for bigeye for monitoring purposes also considering the concerns about its fully utilised status. Notwithstanding, CPCs have continually failed to comply with the requirements of the IOTC for submission of reports on bigeye imports.

The IOTC has adopted Recommendation 03/05 '*Concerning Trade Measures*' which requires CPCs who import tuna and tuna-like fish products or in whose ports those products are landed to collect and examine import and landing data and submit information on, *inter alia*, names and registration of vessels; the flag States; species and areas of catch; and points of export. Market States can otherwise identify if the tuna catches are legal from the IOTC record of authorised vessels.

The IOTC has established a compliance committee whose main function is to review the compliance of CPCs with conservation and management measures and advice the Commission appropriately.²⁹⁰ In spite of the measures adopted by the Commission, non-compliance remains a significant problem. The substantive regulatory gaps in the IOTC MCS measures, when coupled with non-compliance with the conservation and management measures adopted by the Commission, undermine the effectiveness of its conservation objectives. There is a need for the Commission to strengthen its MCS measures and also to develop a scheme to deal with non-compliant flag States (and vessels). Such a scheme should also promote compliance by Member

²⁸⁷ IOTC, Resolution 01/06 '*Concerning the IOTC Bigeye Tuna Statistical Document Programme*.'

²⁸⁸ FAO, *Report of the Expert Consultation of Regional Fisheries Management Bodies on Harmonisation of Catch Certification*, La Jolla, USA, 9-11 January 2002.

²⁸⁹ IOTC, Resolution 01/06.

²⁹⁰ IOTC, Resolutions 02/03, '*On the Terms of Reference for the IOTC Compliance Committee*' and 10/09, '*Concerning the Functions of the Compliance Committee*'

States. Members need to be made more accountable and report the action they have taken against non-compliant vessels.

4.3 Conclusion

This chapter has examined the conservation and management measures that the IOTC has adopted for the management of the tuna stocks in the Indian Ocean. It has been shown that a number of IOTC's conservation and management measures are not consistent with the requirements of international fisheries instruments. This has hampered the ability of the IOTC to deliver its mandate with respect to catch limitations, fishing entities, boarding and inspection, and compliance.

It has also been shown that the levels of compliance with the IOTC conservation and management measures are low and that many of the recommendations of the IOTC are not being implemented. The status of stocks under the management of the IOTC is also uncertain as the data is limited in quality and is not submitted in a timely manner. The issue of penalties for Members of the IOTC has not yet been addressed. Thus, many of the objectives of the IOTC have not been met.

CHAPTER 5

LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK FOR FISHERIES IN KENYA

5.1 Introduction

Chapters 2 and 4 discussed the international and regional legal framework for the management of tunas in the Indian Ocean. The succeeding chapters will now deal with Kenya's management and utilisation of tuna resources in its EEZ. Kenya's efforts in this regard must be seen in the context of the international and regional frameworks previously analysed.

The long-term sustainability of Kenya's tuna resources requires an effective legal and institutional framework. This chapter reviews Kenya's national laws and policies pertaining to the development and management of fisheries. The chapter examines Kenya's regulatory framework in order to establish the arrangements it provides for the development of tuna management strategies. An appropriate legal and regulatory framework is fundamental for meeting Kenya's tuna conservation and management obligations.

This chapter is in three main parts. The first part discusses Kenya's status with respect to its ratification of the relevant international and regional fisheries instruments. The implementation of Kenya's international and regional obligations in respect of tuna is discussed in chapter 6. The second part identifies and reviews Kenya's national laws and policies related to fisheries and in particular tuna fisheries management. It also discusses the legal and policy constraints to the management of Kenya's tuna fisheries and identifies some examples of current State legislative practices as a reference point for Kenya. The third part examines Kenya's national development policies and other fisheries sector plans in order to establish the extent to which the fisheries sector has been included in Kenya's national development strategies. It is argued that, failure to fully integrate fisheries into the development discourse has marginalised it. Consequently, the potential of Kenya's tuna fishery has not been fully realised. This has impacted the development of an appropriate legal and policy framework for national tuna management in Kenya.

5.2 Legal, Policy and Regulatory Framework for Fisheries in Kenya

The sustainable utilisation of Kenya's tuna resources requires a supportive legal regime. The development, utilisation, conservation and management of Kenya's fisheries resources are governed by the *Fisheries Act 1989*,¹ and the *Environmental Management and Co-ordination Act (EMCA-1999)*.² Also important for fisheries management is the *National Oceans and Fisheries Policy*.³ The *Fisheries Act 1989* creates the basic framework for the management of Kenyan fisheries. The *Environmental Management and Co-ordination Act (EMCA-1999)* does not deal directly with fisheries management but is relevant in addressing issues of the sustainable utilisation of marine fisheries resources. The *National Oceans and Fisheries Policy* was developed out of the need of an integrated ocean management policy which could guide the use and management of ocean space and the resources therein.

Other relevant policies and plans that provide strategies for the development of fisheries include the *National Development Plans*, *District Focus for Rural Development Policy* (1985), the *Poverty Reduction Strategy Paper (PRSP-2001)*, and the *Economic Recovery Strategy (ERS) for Wealth and Employment Creation* (2003-2007).⁴ The following sections discuss the fisheries Jurisdiction laws of Kenya, the environmental laws that are related to fisheries management, national policies and development plans that constitute Kenya's fisheries management framework.

5.2.1 International and Regional Fisheries Instruments

The legal basis for implementing national measures for the sustainable management of tuna resources is derived from international and national laws. Kenya has ratified and acceded to international and regional instruments relevant for the conservation and management of tuna. The most significant international instruments in this regard are the LOSC, and the UN Fish Stocks Agreement.⁵ Kenya has also

¹ Laws of Kenya, The Fisheries Act, Chapter 378 of the laws of Kenya, Act No. 5 of 1989 which came into effect on 25th August, 1989 (revised edition 1991). Hereinafter the Fisheries Act 1989.

² Republic of Kenya, the *Environmental Management and Co-ordination Act, 1999*. Act No. 8 of 1999 which came into effect on 14th January 2000, hereinafter EMCA-1999.

³ Republic of Kenya, *National Oceans and Fisheries Policy*, 2008.

⁴ Republic of Kenya, *the Economic Recovery Strategy for Wealth and Employment Creation 2003-2007*.

⁵ UN, *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks*

committed to implement the FAO Code of Conduct for Responsible Fisheries.⁶ Because of its national interest in the development of the tuna industry, and in recognition of the need for the international management of tuna fisheries, Kenya is also a member of the Indian Ocean Tuna Commission (IOTC).⁷ As a party to these international instruments and having ratified and acceded to regional fisheries agreements, Kenya is obliged to exercise its rights and jurisdictions in the EEZ by adopting regulatory and management measures for the conservation and management of tuna resources and by enacting legislation and regulations that conform to the provisions of these instruments and agreements.

5.2.2 The Fisheries Act 1989

The *Fisheries Act 1989* is the principal legislative instrument governing fisheries in ‘Kenya fishery waters’.⁸ The Fisheries Act provides the statutory framework for regulating activities on marine and inland fisheries resources in Kenya. It provides for the development, management, exploitation, utilization and conservation of Kenya’s fisheries resources. The provisions set out in the Fisheries Act apply to [tuna] EEZ fisheries as well. The Principal Act is divided into six parts and twenty-four sections. The six parts of the Act provide for the administration of fisheries, registration of fishing vessels, licensing, offences and enforcement, and general provisions such as conducting of prosecutions, protection of marine mammals and specifications of the Minister’s powers to make regulations.⁹

The Fisheries Act also includes subsidiary legislation under which two major sets of Regulations have been formulated to guide its implementation. First, the *Fisheries (General) Regulations* (Legal Notice 34) of 1991 have been enacted under

and Highly Migratory Fish Stocks, opened for signature 4 December 1995, 2167 UNTS 88 (entered into force 11 December 2001). Hereinafter referred to as the UN Fish Stocks Agreement.

⁶ Kenya has been a participant in the relevant meetings concerning the formulation of the Code of Conduct, including the Rome Declaration on the Implementation of the Code of Conduct on Responsible Fisheries held in Rome 10-11 March 1999.

⁷ Kenya became a member of the IOTC in 2004. See, FAO, *Review of the World Marine Capture Fisheries Management: Indian Ocean*, FAO Fisheries Technical Paper 488 (FAO, 2006).

⁸ ‘Kenya fishery waters’ means the inland waters and the waters of the maritime zones described in the Maritime Zones Act 1989, and for the purposes of the Fisheries Act 1989 excludes government fish ponds and fish farms and any private fish ponds or fish farms not established for commercial purposes. See the Fisheries Act, 1989, Part I.

⁹ The *Fisheries Act 1989*, Part I-Part VI.

Section 14(1) of the Fisheries Act which empowers the Minister to make regulations requiring a license for any fishery activities. These Regulations are concerned with issues regarding local fishermen including, *inter alia*, registration of fisheries vessels, licensing of fishermen and enforcement.¹⁰ They are set out in twelve parts and sixty-nine sections and also contain four Schedules made up of license application forms, categories of license and permit fees, designated fish landing sites and fish measurements respectively.

Second, the *Fisheries (Foreign Fishing Craft) Regulations* (Legal Notice 35) of 1991 have been enacted under Section 23 of the Fisheries Act 1989. Under this Section (23) of the Fisheries Act, the Minister is empowered to make Regulations presenting the conditions to be fulfilled by foreign participation in fisheries, including conditions of licensing foreign fishing vessels and fees payable thereof.¹¹ The Minister may also make Regulations to, *inter alia*, regulate fish handling, storage and processing; inspection of fish products; management and control of fishing ports; and provide for registration of private marks for fishing gear.¹² The *Fisheries (Foreign Fishing Craft) Regulations* which are set out in five parts and forty-seven sections regulate the activities of foreign fishing vessels. In particular, the Regulations provide for the licensing and control of the activities of such vessels in Kenya Fishery Waters, marine fisheries research, and enforcement.¹³ The two Schedules which are part of these Regulations provide a template of the application form for a foreign fishing license and fee levels. The *Fisheries (Foreign Fishing Craft) Regulations* address matters of [tuna] fishing vessels operations in the EEZ.

5.2.3 Environmental Management and Co-ordination Act 1999

The *Environmental Management and Co-ordination Act 1999* is a framework law providing for the establishment of an appropriate legal and institutional framework for the management of the environment and related matters in Kenya.¹⁴ It provides for improved legal and administrative coordination of the diverse sectoral initiatives to

¹⁰ The *Fisheries (General) Regulations*, Part I-Part XII.

¹¹ The *Fisheries Act 1989*, Section 23(2)(a) and (b).

¹² The *Fisheries Act 1989*, Section 23(2)(d, e, f and i).

¹³ The *Fisheries (Foreign Fishing Craft) Regulations* Part I-Part V.

¹⁴ The *Environmental Management and Co-ordination Act 1999*.

improve the national capacity for the management of the environment.¹⁵ For the purpose of this thesis, the Environmental Management and Co-ordination Act provides for the protection of the coastal zone and the resources therein. In connection with this, the Act empowers the Minister to issue by Gazette notice, general and specific orders, regulations or standards for the management of coastal zones which may include management, protection or conservation measures in respect of the harvesting of aquatic living resources to ensure optimum sustainable yield,¹⁶ and special guidelines for access to and exploitation of living and non-living resources in the continental shelf, territorial sea and EEZ.¹⁷

5.2.4 The National Oceans and Fisheries Policy 2008

The development of the *National Oceans and Fisheries Policy 2008* (Appendix I to the thesis) is a watershed in Kenya's fisheries policy development. The policy was formulated with a view to ensuring the inclusion of the fisheries sector in the realization of economic growth of the country. The National Oceans and Fisheries policy thus strives to achieve coherence with the current economic development policy in order to enhance development of the fisheries sector. It provides general policy guidelines on the sustainable utilization and production of Kenya's fisheries in general. It states the objectives of the fisheries sector and also outlines the course of action for the management of fisheries.

The overall objective of the *National Oceans and Fisheries Policy 2008* is 'to enhance the fisheries sector's contribution to wealth creation, increased employment for the youth and women, food security, and revenue generation through effective private, public and community partnerships'.¹⁸ Specific objectives of the policy include; earning maximum foreign exchange; increasing the contribution of the fisheries sector to the national wealth; and developing [tuna] fisheries.¹⁹ The policy acknowledges the need for local communities to benefit from [tuna] fisheries and recognises that the current licensing system for tuna fishing vessels operating in Kenya's EEZ does not encourage

¹⁵ National Environment Management Authority, <http://www.nema.go.ke/> (accessed 27 March 2009).

¹⁶ The *Environmental Management and Co-ordination Act 1999*, Part V, Section 42(3)(g).

¹⁷ The *Environmental Management and Co-ordination Act 1999*, Part V, Section 42(3)(h).

¹⁸ The *National Oceans and Fisheries Policy, 2008*, Chapter 3 (3.2.1).

¹⁹ The *National Oceans and Fisheries Policy, 2008*, Chapter 3 (3.3).

or ensure sustainable utilisation of the [tuna] stocks. Hence, the benefits from such stocks have not been realised.²⁰ The policy promotes modern fisheries management and conservation principles such as, the ecosystems and precautionary approaches to fisheries management.²¹ It also commits the Kenyan government to provide a proper legal and institutional framework for the ocean exploration and development.²²

The National Oceans and Fisheries Policy also makes general statements concerning monitoring, control and surveillance as well as flag State responsibility. Regarding flag States responsibility, the policy states that vessels flying the Kenyan flag will adhere to international laws and management regulations.²³ Concerning regional and international agreements and cooperation, the policy affirms the continued participation of DWFNs in Kenya's [tuna] fishery and commits that such participation shall take into account the state of the stock and economic returns.²⁴

5.2.5 Other Relevant National Legislation

The Wildlife (Conservation and Management) Act of 1976 (amended 1989) provides for the establishment of Marine Protected Areas (MPAs). The World Conservation Union (IUCN) has adopted the following definition of an MPA which is the most widely used:

any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.²⁵

MPAs are instrumental in the conservation of marine resources and have been established globally to maintain essential ecological processes and life support systems; to preserve genetic diversity and to ensure the sustainable utilisation of species and ecosystems.²⁶

²⁰ The *National Oceans and Fisheries Policy* 2008, Chapter 2(2.1.4).

²¹ The *National Oceans and Fisheries Policy*, 2008 Chapter 3 (3.2).

²² The *National Oceans and Fisheries Policy*, 2008 Chapter 3 (3.3.9).

²³ The *National Oceans and Fisheries Policy*, 2008 Chapter 4(4.5)

²⁴ The *National Oceans and Fisheries Policy*, 2008 Chapter 4 (4.6).

²⁵ Graeme Kelleher (ed), *Guidelines for Marine Protected Areas* (IUCN, 1999) xi.

²⁶ *Ibid*, vi.

Kenya has established a system of marine protected areas (MPAs) encompassing important marine habitats designated to protect the ecological integrity of its marine ecosystems.²⁷ The MPAs include core areas designated as parks, that are totally protected and reserves which act as buffer zones, in which limited human interaction and exploitation are allowed.²⁸ Thus, the marine parks are embedded in larger reserves where 'traditional' extraction of resources is permitted.²⁹ The IUCN has categorised protected areas according to the objectives for which they have been set up. Based on this categorisation, Kenya's marine parks fall under Category II (ecosystem protection and recreation), while the reserves belong to Category VI (sustainable use of natural ecosystems) respectively.³⁰

The protection of MPAs in Kenya has led to a significant improvement of the coral reef habitat, where coral cover has increased over the years from 10 to ~40% at some sites.³¹ Fish biomass and fish sizes have also increased especially in the marine parks where no fishing activities are permitted compared to the marine reserves where some limited fishing is allowed.³² Coral reefs are used extensively as areas for catching the bait used in the tuna fishery.³³ More importantly and relevant to the present thesis, is the spawning aggregation of tuna in the reefs and the dispersal of their larvae into near oceanic waters which is very significant for their productivity and sustainability. Tuna larvae are known to concentrate near islands and reefs.³⁴ Kenyan MPAs are located predominantly in reef areas and are therefore most significant for the protection of these life stages of tuna which are very vulnerable.

²⁷ Kenya is one of the first African countries to establish marine protected areas. See Jane Rowena Mbendo, *Integrated Environmental Assessment of the Kenya Coast with Special Reference to Sea Turtles*, MSc. Thesis, University of Warwick, 1998.

²⁸ David Obura, 'Kenya' (2001) 42(12) *Marine Pollution Bulletin* 1264, 1275.

²⁹ Ibid.

³⁰ IUCN, *Guidelines for Protected Area Management Categories* (IUCN, 1994) 7.

³¹ T R McClanahan, S Mwaguni and N A Muthiga, 'Management of the Kenya Coast' (2005) 48 *Ocean & Coastal Management* 901, 924. Coral cover is an indication of good reef health.

³² Ibid; Boaz Kaunda-Arara and George A Rose, 'Effects of Marine Reef National Parks on Fishery CPUE in Coastal Kenya' (2003) 118(1-13) *Biological Conservation* 1, 10.

³³ Tamelander *et al*, *Reef Fish Spawning Aggregations in the Bay of Bengal: Awareness and Occurrence*, Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008.

³⁴ Ashley M Fowler, Jeffrey M Leis, Iain M Suthers, 'Onshore-offshore Distribution and Abundance of Tuna Larvae (Pisces: Scombridae: Thunnini) in Near Reef Waters of the Coral Sea' (2008) 106(4) *Fishery Bulletin* 405, 406.

5.3 Institutional Arrangements for Fisheries Management

The Fisheries Act 1989 is implemented by the Ministry of Fisheries Development which was set up in 2008.³⁵ The Ministry includes two technical departments, namely, the Department of Fisheries and the Kenya Marine and Fisheries Research Institute (KMFRI).³⁶ The Fisheries Department has management and conservation responsibilities for marine and inland fisheries as a result of the legislative provisions contained in the Fisheries Act 1989. The mandate of the Fisheries Department is to promote the development of both traditional and industrial fisheries, fish culture and related industries.³⁷ The Department may achieve this by providing extension and training services; conducting research and surveys; promoting arrangements for the orderly marketing of fish and providing infrastructure facilities.³⁸

The Director of Fisheries is charged with the administration of the provisions of the Fisheries Act, subject to the directions of the Minister.³⁹ Thus, the Director may regulate the development of fisheries⁴⁰ and with the approval of the Minister, also impose fisheries management measures for the proper management of any fishery.⁴¹ Responsibility for research into both marine and inland fisheries lies with the Kenya Marine and Fisheries Research Institute (KMFRI).

The Wildlife (Conservation and Management) Act of 1976 which is implemented by the Ministry of Tourism and Wildlife, establishes the Kenya Wildlife Service which advises the government on the establishment of national parks, reserves and other sanctuaries. The Kenya Wildlife Service also manages these designated areas. Thus, the management of Kenya's Marine Protected Areas (MPAs) falls under the jurisdiction of the Kenya Wildlife Service. The enforcement in the MPAs is carried out jointly by the Department of Fisheries and the Kenya Wildlife Service.

The EMCA-1999 is implemented by the Ministry of Environment and Mineral Resources. The National Environmental Management Authority is the custodian of the

³⁵ The Ministry of Fisheries Development was set up through the Presidential Circular No. 1 of 2008. See Republic of Kenya, *National Oceans and Fisheries Policy*, 2008, Section 2.8.1.

³⁶ Ministry of Fisheries Development <http://www.fisheries.go.ke/> (accessed 30 September 2010).

³⁷ The *Fisheries Act 1989*, Section 4.

³⁸ The *Fisheries Act 1989*, Section 4(a, b, d and e).

³⁹ The *Fisheries Act 1989*, Section 3(1).

⁴⁰ The *Fisheries Act 1989*, Section 4.

⁴¹ The *Fisheries Act 1989*, Section 5.

EMCA -1999 and its role is to supervise and coordinate all matters relating to the environment. The Authority is the principal instrument of government in the implementation of all policies relating to the environment.⁴²

5.4 Legal and Policy Constraints to the Management of Kenya's Tuna Fisheries

As established above, the Fisheries Act 1989 is generic and applies broadly to marine and inland fisheries. Although the *Fisheries (Foreign Fishing Craft) Regulations* are concerned with the operations of [tuna] fishing vessels in the EEZ, they do not address the management of fisheries in this zone. Overall, the Fisheries Act has no provisions designed to establish specific management strategies for the management of Kenya's tuna resources.

As discussed in chapter 2, the LOSC has conferred on Kenya sovereignty over its tuna resources in the EEZ. The LOSC also imposes responsibility upon Kenya to conserve, manage and utilise the tuna stocks under its jurisdiction.⁴³ Consequently, Kenya is under an obligation to establish the appropriate framework for the national management of tuna stocks under its jurisdiction. It was also seen in chapter 2 that tuna fisheries are categorised as highly migratory species under the LOSC,⁴⁴ and that they are also subject to international legal rules. The classification of tuna as highly migratory species has management implications thereby requiring an enabling legal framework for the formulation of the appropriate management arrangements. Such a provision is necessary if Kenya's tuna fisheries are to be managed in their full range as required by the LOSC and the UN Fish Stocks Agreement.

Given that the Fisheries Act 1989 is the primary Act governing the management of fisheries in Kenya, it is imperative that it provides the fundamental statutory basis for the implementation of management approaches that respond to the unique biological characteristics of tuna. According to the FAO, national fisheries legislation may specify details on the implementation of aspects of the policy considered to be particularly important and should include reference to establishing fishery management plans and the procedure for the planning process.⁴⁵

⁴² National Environment Management Authority <http://www.nema.go.ke/> (accessed 28 September 2010).

⁴³ LOSC, Art. 55(1)(a).

⁴⁴ LOSC, Art. 64.

⁴⁵ K L Cochrane (ed), *A Fishery manager's Guide Book: Management Measures and their Application*, FAO Fisheries Technical Paper No. 424 (FAO, 2002)16.

Notably, Kenya's Fisheries Act has remained in place since its enactment in 1989, with only a single revision in 1991. This suggests that the political support for policy change may be weak. For Kenya to accommodate the changing circumstances within the fisheries sector and the relevant requirements under international law for the management of its tuna resources, it will be necessary for the national Fisheries Act to be revised accordingly. Particularly, the Fisheries Act will need to be revised to reflect good governance practice as mandated under international law.

5.3.1 State Legislative Practices

In practice, some States have successfully incorporated provisions in their national fisheries legislation relating to the implementation of management and development plans for designated fisheries. On the basis of this provision, such States have developed specific management measures for tuna fisheries which have been stipulated in national tuna management plans. In these tuna management plans, States outline the principles of tuna management and implementation strategies. They may also define their development aspirations. The formulation of management plans for fisheries is consistent with the provision of the FAO Code of Conduct which encourages long-term management objectives to be translated into management actions, formulated as a fishery management plan or other management framework.⁴⁶ The definition of a fishery management plan has been given by FAO as follows:

a formal or informal arrangement between a fishery management authority and interested parties which identifies the partners in the fishery and their respective roles, details the agreed objectives for the fishery and specifies the management rules and regulations which apply to it and provides other details about the fishery which are relevant to the task of the management authority.⁴⁷

Generally, policy statements are strengthened when they are legislated. The global trend in fisheries legal frameworks is for fisheries legislation to set out principles or policies that are used to guide the implementation of statutory management powers and functions.⁴⁸ To illustrate the manner in which fisheries legislation could provide a

⁴⁶ FAO Code of Conduct, para. 7.3.3.

⁴⁷ FAO, *Technical Guidelines for Responsible Fisheries No. 4: Fisheries Management* (FAO, 1997), Section 4(4.1).

⁴⁸ FAO, *Law and Sustainable Development since Rio – Legal Trends in Agriculture and Natural Resource Management*, FAO Legislative Study 73 (FAO, 2002).

legal basis for the development of management strategies for designated fisheries like tuna, this thesis draws from the current State practice, finding examples from some of the Pacific Island States. The reason for drawing examples from the Pacific Island States derives from the fact that the world's most important industrial tuna fishery, by value and volume, lies in the Western and Central Pacific Ocean.⁴⁹ As the land-based resources of these small island States are limited, their tuna resources are of fundamental economic importance. As a result, these States have made efforts to establish management regimes that would enhance the economic returns from their tuna fisheries. The Pacific Island States Members of the South Pacific Forum Fisheries Agency (FFA) have a major stake in this resource, as three quarters of catches are taken from their EEZs.⁵⁰

As seen in chapter 2(2.4.1), the FFA plays a facilitative and coordinating role amongst its members whose objective is to manage their tuna resources sustainably, in order to meet their fisheries development aspirations. The economic returns from tuna fisheries constitute a critical segment of many Pacific small island developing States' economies.⁵¹ For this reason, the FFA Member States have developed a Regional Tuna Management and Development Strategy as "an important backbone for the region" in order to maintain regional solidarity, uphold existing regional and national arrangements and implement appropriate conservation and management measures.⁵²

Under current State legislative practice, many of the Pacific Island States have included in their fisheries legislation a provision for the implementation of management and development plans. The Territorial Sea and Exclusive Economic Zone Act 1996 of Niue for example, includes a provision for fisheries management and development. Under this provision, the Cabinet may, by notice in the Gazette declare a fishery as "designated" if it thinks it is in national interest to ensure the fishery's effective conservation or its efficient use.⁵³ This provision also includes an element for the

⁴⁹ Tim Stephens, *Fisheries-Led Development in the South Pacific: Charting a "Pacific Way" to a Sustainable Future* (2008) 39 *Ocean Development & International Law* 257, 257.

⁵⁰ Tim Stephens, *Fisheries-Led Development in the South Pacific: Charting a "Pacific Way" to a Sustainable Future* (2008) 39 *Ocean Development & International Law* 257, 258.

⁵¹ Tim Stephens, *Fisheries-Led Development in the South Pacific: Charting a "Pacific Way" to a Sustainable Future* (2008) 39 *Ocean Development & International Law* 257, 267.

⁵² FFA, *Regional Tuna Management and Development Strategy* 2009-2014.

⁵³ Republic of Niue, *Territorial Sea and Exclusive Economic Zone Act*, Section 12.

preparation and implementation of management and development plans.⁵⁴ According to the Territorial Sea and Exclusive Economic Zone Act 1996 of Niue, the Director may direct a Fisheries Officer to prepare and implement a management and development plan for a designated fishery.⁵⁵ Such a plan identifies the fishery to which it relates; sets out the objectives to be achieved; specifies the management measures to be adopted to achieve those objectives; the protection to be given to the habitat of the fishery; limits within which the fishery may be exploited; licensing requirements; and the protection to be given to any other designated fishery.⁵⁶

Similarly, according to the Fisheries Management Act 1998 of Papua New Guinea, the Managing Director may, and where the Minister requires so, shall cause to be drawn up a Fishery Management Plan in respect of any fishery resource in the fisheries waters.⁵⁷ The fisheries plan identifies the fishery and its characteristics, including its current state of exploitation; specifies the objectives to be achieved in the management of the fishery; identifies any adverse environmental effects of the operation of fishing activities in the fishery, and identify any customary fishing rights or practices where appropriate.⁵⁸ Papua New Guinea is one of the most significant participants in regional tuna fisheries.⁵⁹ Other Pacific Island States with similar provisions include, *inter alia*, Solomon Islands,⁶⁰ Nauru,⁶¹ Vanuatu⁶² and Tonga.⁶³ Fishery management plans are to be kept under review and amended accordingly.

5.3.2 National Tuna Management Plans

The adoption of national tuna management and development plans in most of the Pacific Island States derives from the provision of their fisheries legislation. Barclay asserts that the reliability of tuna management plans depends on their legitimacy, and

⁵⁴ Republic of Niue, *Territorial Sea and Exclusive Economic Zone Act*, Section 13.

⁵⁵ Republic of Niue, *Territorial Sea and Exclusive Economic Zone Act*, Section 13(1).

⁵⁶ Republic of Niue, *Territorial Sea and Exclusive Economic Zone Act*, Section 13(2).

⁵⁷ Papua New Guinea, *Fisheries Management Act 1998*, Section 28(2).

⁵⁸ Papua New Guinea, *Fisheries Management Act 1998*, Section 28(3).

⁵⁹ Tim Stephens, Fisheries-Led Development in the South Pacific: Charting a “Pacific Way” to a Sustainable Future (2008)39, *Ocean Development & International Law* 257, 273.

⁶⁰ Solomon Islands, *the Fisheries Act 1998 (No. 6 of 1998)*, Section 7.

⁶¹ Republic of Nauru, *Fisheries Act 1997 (No. 18 of 1997)*, Section 10.

⁶² Republic of Vanuatu, *Fisheries Act No. 55 of 2005*, Section 3.

⁶³ Kingdom of Tonga, *Fisheries Act 2002 (No. 26 of 2002)*, Section 7.

that such plans should have legislative force.⁶⁴ The current tuna management plans of most of the Pacific Island States for example, have been developed through wide consultation and are therefore considered holistic and complete with respect to stakeholders' needs.⁶⁵ Although the content of national tuna management plans may vary from State to State, their basic objective is to set out rules and procedures guiding the management and development of tuna fisheries. In the case of the Pacific Island States, these plans also respond to the conservation obligations of the Convention on Conservation and Management of highly Migratory Fish Stocks in the Western and Pacific Ocean.⁶⁶ Such plans require frequent evaluation and revision in order to cope with the dynamic nature of the tuna fishery. Examples of the national tuna management plans for Vanuatu and Papua New Guinea are further discussed.

5.3.2.1 The Tuna Management Plan of Vanuatu

The national tuna management plan of Vanuatu (a national policy for the management of Vanuatu tuna fisheries) has been developed in accordance with Part 2, Section 3 of the Fisheries Act, No. 55 of 2005. It is made up of five sections providing the policy and administrative framework for tuna management; strategies for the conservation and management of tuna, and for local tuna fishery development; and schedules specifying closed areas, limits on license numbers, total allowable catch and fees.⁶⁷

The specific purpose of the Vanuatu national tuna management plan is to; (a) provide clear objectives and direction for managing tuna resources; (b) provide achievable, measurable goals and principles to direct management towards the overall objectives; (c) establish clear transparent rules for licensing, monitoring and regulating tuna fishing activities, and (d) establish an administrative framework for ensuring the

⁶⁴ Kate Barclay with Ian Cartwright, *Capturing Wealth from Tuna: case Studies from the Pacific*, (ANU E Press and Asia Pacific Press, 2007). According to Barclay, such plans should be 'owned' by nationals and not just drafted by consultants as was the case with the tuna management plans of most of the Pacific Island States in the past 10 years.

⁶⁵ Josie Tamate, 'Access Agreements: South Pacific Forum Fisheries Agency', A paper presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

⁶⁶ Tim Stephens, 'Fisheries-Led Development in the South Pacific: Charting a "Pacific Way" to a Sustainable Future' (2008) 39 *Ocean Development & International Law* 257, 273.

⁶⁷ Republic of Vanuatu, *Tuna Management Plan*, Clause 1.1.

implementation of the plan and mechanisms for updating the it accordingly.⁶⁸ The tuna management plan also contains objectives which include; (a) ensuring that the exploitation of the tuna resources is compatible with sustainability throughout their range; (b) the harvest is taken in a manner that maximises long-term economic and social benefits by Vanuatu citizens; (c) contribute to food security, and (d) meet the relevant regional and international responsibilities.⁶⁹ A summary of strategies developed to implement the plan's goals is also provided.

5.3.2.2 The Tuna Management Plan of Papua New Guinea

A second example is the national tuna management plan for Papua New Guinea. Similar to the Vanuatu management plan, the broad objective of the national tuna management plan for Papua New Guinea is to give effect to the fisheries management principles contained in the Fisheries Management Act.⁷⁰ However, the PNG plan places more emphasis on maximising Papua New Guinea participation through the wise development of its tuna resources and it includes a domestication policy in this regard.⁷¹ This aspiration is also reflected by the management strategies developed for the tuna fishery, which are to encourage and facilitate sustainable development of Papua New Guinea domestic tuna industry;⁷² develop and apply criteria for licensing which give preference to Papua New Guinea operators;⁷³ and support fiscal and development incentives in the domestic tuna industry.⁷⁴ Papua New Guinea's domestication aspirations are also reflected in the allocation of licenses.⁷⁵ The principle objective of the Papua New Guinea national tuna management plan in this respect is; to promote an increased rate of participation by Papua New Guineans in the tuna industry.⁷⁶

Tuna management plans do not only improve transparency and provide policy directions which can be relied upon, but they also provide a valuable guide for policy

⁶⁸ Republic of Vanuatu, *Tuna Management Plan*, Clause 1.2.

⁶⁹ Republic of Vanuatu, *Tuna Management Plan*, Clause Section 2.1.

⁷⁰ Papua New Guinea, *National Tuna Management Plan*, Clause 6.

⁷¹ Papua New Guinea, *National Tuna Management Plan*, Clause 15.

⁷² Papua New Guinea, *National Tuna Management Plan*, Clause 7(c).

⁷³ Papua New Guinea, *National Tuna Management Plan*, Clause 7(d).

⁷⁴ Papua New Guinea, *National Tuna Management Plan*, Clause 7(f).

⁷⁵ Papua New Guinea, *National Tuna Management Plan*, Clause 24.

⁷⁶ Papua New Guinea, *National Tuna Management Plan*, Clause 15(2).

improvement for the sustainable development and management of tuna resources.⁷⁷ In the light of current State practice, it can be concluded that tuna management plans are becoming significant as tools for adopting and implementing management measures that may result in sustainable tuna fisheries. However, Kenya's fisheries legislation is devoid of any measures or tools to aid the development and implementation of a management plan pertaining to its tuna resources. This gap in the fisheries legislation represents a hindrance to the sustainable management and development of tuna fisheries.

As the fisheries Act 1989 is the key legislation governing the management of fisheries in Kenya, such measures will need to be enshrined in this legislation in order to fulfil Kenya's social and economic objectives with respect to its tuna resources. It is imperative that a legislative basis for the effective management of Kenya's tuna resources be created if Kenya is to utilise these resources sustainably as required under international law. Such a provision will enable the establishment of appropriate principles for managing tuna. Kenya can articulate its legislative obligations through policies which can be established for the conservation and management of its tuna resources. Such obligations can be enacted through national tuna management plans and arrangements which in turn can be effected by the Department of Fisheries. Thus, a tuna management plan would enable the formulation of an implementation strategy for the appropriate tuna management principles. Moreover, Kenya's fisheries legislation needs to provide adequate mechanisms for implementing the recently developed National Oceans and Fisheries Policy in relation to tuna.

5.4 National Development Policies and other Fisheries Sector Plans

The Department of Fisheries recognises that since Kenya gained independence in 1963, the fisheries sector, and particularly the marine fisheries have not been prioritised by the State for development.⁷⁸ This factor is also recognised by policy

⁷⁷ Kate Barclay with Ian Cartwright, *Capturing Wealth from Tuna: case Studies from the Pacific*, (ANU E Press and Asia Pacific Press, 2007).

⁷⁸ Nancy Gitonga and Robin Achoki, *Fiscal Reforms for Kenya Fisheries*, A paper presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

makers and other institutions including KMFRI.⁷⁹ It can be safely assumed that this is one of the factors that have contributed to the inadequacy of Kenya's fisheries legislation in providing for the development of management strategies for its tuna resources. Kenya's national development policies influence the processes which contribute to the development of policy arrangements in the fisheries sector. It thus becomes necessary to examine the trend in Kenya's national development planning in order to establish the extent to which fisheries has been integrated into its development discourse, and the effect this has had on the fisheries sector as a whole, and consequently the tuna fisheries.

National development plans normally reflect the national aspirations of States. Such plans identify, prioritise and set out the national development concerns of States, from which strategies are developed to fulfil set goals. National development plans are significant as they represent nationally agreed strategies for promoting different government sectors and they identify the direction of the government in this regard. In which case, national development policies that are relevant to fisheries reflect the national interest in the planning and development of a fishery. Such policies have a significant role in facilitating the development of the fishery.

The sections that follow examine the extent to which the fisheries sector has been included in Kenya's principal policy and strategy formulation processes which include the national development plans, the *District Focus for Rural Development policy* (DFRD), *Poverty Reduction Strategy Paper* (PRSP), and the *Economic Recovery Strategy for Wealth and Employment Creation* (ERS). It is concluded that the interests of the fisheries sector in Kenya have generally not been well articulated in the national policy formulation processes. Consequently, the development of an appropriate framework for the management of tuna fisheries has not been achieved, and the industry has not been prioritised as a potential income source.

5.4.1 National Development Plans

Inclusion of tuna fisheries in national development discourses is one way of articulating the interests of the fisheries sector in the development of Kenya's tuna fishery. It is argued that 'the mainstreaming of fisheries into national development plans

⁷⁹ Colin Barnes, *Business Plan for a National Fisheries Development Institution in Kenya*, 2005. Consultancy Report no. 14.

and/or PRSPs can prevent both the economic marginalization of the sector and reduce the likelihood that policies prejudicial to the sector and its stakeholders are adopted'.⁸⁰ Thus, it can be assumed that by incorporating Kenya's tuna fisheries into national development policies and other relevant sectoral development, the potential of tuna fisheries' contribution to the national economy could be realised. In addition, this would stimulate the enactment of enabling legislation and the formulation of appropriate policies for the sustainable management of tuna fisheries in Kenya.

5.4.1.1 Long-term Development Policies

Kenya has undertaken the development of macro-economic policies since independence in 1963. Its development agenda for economic growth has been outlined broadly in five-year national development plans. In addition, two long term policies have been used to guide Kenyan national planning and investment, namely, Sessional Paper No. 10 of 1965 on *African Socialism and its Application to Planning in Kenya*, and Sessional Paper No. 1 of 1986 on *Economic Management for Renewed Growth*. The publication of Sessional paper No. 1 in 1986 brought about a major review of the macro-economic policy, with emphasis upon renewed, rapid, economic growth.⁸¹ The rapid economic growth was envisaged to be achieved through a process of trade liberalization.

The Sessional Paper No. 1 of 1986 which was the principal document that provided guidelines for economic policy during this period, did not directly refer to the role of the fishing sector, but it contained concerns related to agriculture, with which fisheries has always been closely related.⁸² It emphasised the role of agriculture as the leading sector in stimulating economic growth but did not make any significant policy statements regarding fisheries. In this document fish is mentioned only in relation to beef and other meats.⁸³ This highlights the lack of consideration of the potential of the fisheries sector in contributing to economic growth right from the early stages of the

⁸⁰ Thorpe *et al*, 'When Fisheries Influence National Policy-Making: an Analysis of the National Development Strategies of Major Fish Producing Nations in the Developing World' (2005) 29 *Marine Policy* 211, 211. See also Andy Thorpe, *Mainstreaming Fisheries into National Development and Poverty Reduction Strategies: Current Situation and Opportunities*, FAO Fisheries Circular No. 997 (FAO, 2005).

⁸¹ André G. Coche (ed), *Aquaculture Development and Research in Sub-Saharan Africa: National Reviews*, CIFA Technical paper No. 23 Supplement (FAO, 1994) 183.

⁸² Ibid 184.

⁸³ Ibid 186.

development of national policy in Kenya. It also implies that the contribution of fisheries to national economic development must be deemed significant in order for adequate policies to be formulated for fisheries management and for the development of the fisheries sector. This aspect is discussed further in the following sections by examining the extent to which fisheries has been integrated into Kenya's national development processes. First, the national development plans that have been established since Kenya gained independence in 1963 will be discussed. These plans have been organised chronologically in four phases for the period 1964 to 2008, in ten-year time frames. Second, the relevant development policies, national development strategies and fisheries sector plans will be discussed.

5.4.1.2 Phase 1: The Period 1964 to 1974

From Kenya's first national development plan, emphasis has been put on the yield of its inland lakes, particularly Lake Victoria which is the second largest lake in the world and which also accounts for more than 90% of the total fish production in Kenya.⁸⁴ The activities proposed in this development plan include; shore preservation and storage facilities serving fish production areas; harbor and landing beach improvements, and development of the deep sea fishery including a cannery and industrial vessels. These were the fisheries related themes that became recurrent in Kenya's development plans, and which were never actualised as per the aspirations of the Department of Fisheries.⁸⁵

The development plan of 1970 to 1974 recognised and emphasized the role of fish as a source of protein and proposed major investments in industrial vessels for harvesting the offshore tuna resources.⁸⁶ Considering the financial implications of such investments, it is safe to assume that they were to be achieved through private investments and joint ventures. In the national development plans that were established during this phase, the fish production target was set at 55,000tonnes, up from the 1968

⁸⁴ Joseph L Awange and Obiero Ong'ang'a, *Lake Victoria: Ecology, Resources, Environment* (Springer-Verlag Berlin, 2006) 1.

⁸⁵ André G Coche (ed), *Aquaculture Development and Research in Sub-Saharan Africa: National Reviews*, CIFA Technical paper No. 23 Supplement (FAO, 1994) 187.

⁸⁶ Ibid.

target of 30,000tonnes (which was never achieved) for both marine and fresh water fisheries.⁸⁷

5.4.1.3 Phase 2: The Period 1974 to 1983

During this development phase, a fresh target of 35,000tonnes (27,000tonnes for inland fisheries and 8,000tonnes for marine fisheries) was set under the 1974-1978 national development plan.⁸⁸ Out of a total catch of 41,260tonnes in 1976, marine landings accounted for 4,000tonnes.⁸⁹ Once again, the set target of 55,000t of the previous plan was not achieved. The failure to achieve the target was attributed to overfishing and siltation of the various inland lakes. However, during this phase both inland and marine fisheries achieved and surpassed the targets that had been set, owing to the introduction of new species and shrimp trawling respectfully.⁹⁰

5.4.1.4 Phase 3: The Period 1984 to 1993

The development plans during this phase were very brief in their mention of the fisheries sector. The 1984-88 plan made proposals for the establishment of a fisheries development authority and the construction of a cannery at the port city of Mombasa.⁹¹ Although the sixth plan of 1989-93 referred to the promise of high potential from Kenya's [tuna] EEZ resources, it did not propose any strategy for the development of these fisheries. As none of these documents referred to the proposals of previous plans, it is presumed that the projects and proposals were either not implemented through lack of funds or change of policy, or failed to live up to expectations.⁹²

5.4.1.5 Phase 4: The Period 1997 to 2008

The national development plan of 1997-2001 confirms that Kenya's offshore fisheries which include the EEZ resources, have a potential of up to 200,000t in tuna

⁸⁷ Ibid.

⁸⁸ André G Coche (ed), *Aquaculture Development and Research in Sub-Saharan Africa: National Reviews*, CIFA Technical paper No. 23 Supplement (FAO, 1994) 187.

⁸⁹ Ibid 188.

⁹⁰ Ibid.

⁹¹ Ibid 189.

⁹² Ibid.

and tuna-like species, and that the full potential of the EEZ is yet to be exploited.⁹³ The plan lists one of the activities to be undertaken by the government during this period as, ‘Indian Ocean coastal zone management programmes’.⁹⁴ It is not clear what such programmes would entail.

Under the 2002-2008 national development plan fisheries resources are associated with and discussed under natural resource management. The key objectives for the fisheries and fisheries sector policy priorities are listed as; (a) management, conservation, control and utilisation of fishery resources; (b) promotion of aquaculture development; (c) management and control of fish quality and promotion of fish marketing systems for food security; (d) prepare fisheries master plan.⁹⁵ Regarding the [tuna] EEZ resources the plan proposes to strengthen monitoring, surveillance and control in this area.

5.4.1.6 Weaknesses of the National Development Plans

An examination of the fisheries related national development plans since Kenya’s independence in 1963 reveals various weaknesses. The main weakness of the national development plans is that, they have not been well founded over a period of several decades. As a result, the policy statements stated in these plans concerning the fisheries sector do not appear to have clear objectives regarding the management of fisheries and the development of the fisheries sector as a whole. In addition, although some of the policy statements appear appropriate, they are not supported by any measures or strategies to facilitate their implementation. Most of these statements are general and in some instances, they are vague.

For example, one of the activities proposed to be undertaken in the 1997-2001 development plan is “Indian Ocean coastal zone management programmes”. It is not clear what such programmes entail since this statement is not supported by any action plan. Additionally, despite making reference to the [tuna] EEZ fisheries and to the high potential of Kenya’s EEZ in a couple of the development plans, no strategy has been developed towards the management and development of tuna fisheries to date. The tuna

⁹³ Republic of Kenya, *The Eighth National Development Plan for the Period 1997 to 2001*.

⁹⁴ Ibid.

⁹⁵ Republic of Kenya, *National Development Plan 2002 -2008: Effective Management for Sustainable Economic Growth and Poverty Reduction*.

fisheries related policy objectives stipulated in the national plans have also not been fully implemented. The failure by the government to implement these objectives can be related to the lack of policy implementation guidance, among other things.

Another weakness relates to the absence of a monitoring framework to ensure the full realisation of Kenya's aspirations for the development of its tuna fisheries. The challenge is further complicated by the fact that, the subsequent national development plans do not even make reference to the previous ones. Not only do these plans fail to reflect the outputs of the previous plans, but they also do not build on each other. This implies that the policy process has not been appropriately informed by past experiences, making it difficult for any adjustments or improvement to be made due to lack of appropriate feedback. As a result, there is no continuity in the implementation of the fisheries objectives stated in the national development plans. It thus becomes difficult to determine whether the management goals have been adopted or if the objectives of the national development plans have been realised. For example, with no reference to past development plans, it becomes difficult to establish why tuna fisheries have not been developed despite the underlying potential.

Another problem of the national development plans relates to the manner in which issues regarding fisheries, particularly marine capture fisheries have been addressed. As a whole, fisheries management issues have not been satisfactorily addressed in the framework of Kenya's national development plans. Some of the plans have a single sentence addressing the fisheries sector and in most cases these statements address inland fisheries. Similarly, fisheries sustainability concerns have not even been reflected in the national development plans which have dwelt more on development issues. For example, when tuna fisheries are mentioned in the first national development plan of 1966-70, the policy statement proposes the development of deep sea fisheries and a tuna cannery. Similarly, the second plan of 1970-74 proposed investment in industrial vessels directed towards harvesting of tuna resources. There is no mention of how such resources are to be managed.

An additional problem is that, the planning exercises appear to have become a routine that has achieved few results. The same themes are repeated from one development plan to the next, most of which have not been implemented. For these reasons, it can be seen that the national development plans did not provide a good basis for the management and development of Kenya's tuna resources. Consequently, the

legislation also fell short of providing appropriate guidelines. Considering the fish catch projection targets that have been made in the first two phases, the national development plans reflect the difficulty that the Department of Fisheries has had in determining the economic potential of fisheries in general.⁹⁶ There is thus a reason to conclude that the fisheries sector as a whole has been neglected in Kenya's national development priorities. As a result, the fisheries sector has not enjoyed the priority it should, particularly with regards to financial allocation. This conclusion is consistent with a recent study on the "implementation of a management plan for Lake Victoria" which confirms that the fisheries sector in Kenya has yet to reach its full potential, and that compared to other States which have developed a vibrant fisheries sector it is apparent that much remains to be done to dynamise Kenya's fisheries sector.⁹⁷

To rectify the above mentioned shortcomings, it is necessary for Kenya to make the fisheries sector an integral part of the national development plans. Integrating fisheries into the national development plans will provide a basis for policy development with respect to the management of tuna. The challenge that Kenya faces in integrating the fisheries sector into its national development plans has its roots in the colonial legacy. This challenge lies with the neglect of capture fisheries during the period of British colonial rule. During this period, the importance of capture fisheries was relegated to the periphery of the national interests.⁹⁸ Capture fisheries were not regarded as important because they only served as a supplementary source of food supply to Kenyan nationals.⁹⁹

Aside from pearls, mother-of pearl, beche-de-mer and ambergris, the other fisheries of interest was the trout fishery. The colonial government therefore enacted the appropriate legislation; the Trout Ordinance 1948.¹⁰⁰ Tuna and other marine fish were not the preferred species. Whilst the development of capture fisheries was suppressed during the period of colonial rule, industrial and commercial development of tuna fisheries have resulted in the increased exploitation of Kenya's tuna fisheries today.

⁹⁶ André G Coche (ed), *Aquaculture Development and Research in Sub-Saharan Africa: National Reviews*, CIFA Technical paper No. 23 Supplement (FAO, 1994) 189.

⁹⁷ Colin Barnes, *Implementation of a Fisheries Management Plan for Lake Victoria*, MRAG-UK (2005).

⁹⁸ Republic of Kenya, the *National Oceans and Fisheries Policy* 2008, Chapter 1.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

These developments call for the necessary policy and legal backing to address the management needs of the tuna fisheries.

Aside from the national development plans, the management and development of tuna fisheries in Kenya has been influenced by other major policy documents. These documents are discussed in the following section.

5.4.2 District Focus for Rural Development Policy (1985)

One of the most significant national development policies in Kenya was the District Focus for Rural Development (DFRD), whose overall objective was to devolve planning to the district level by establishing a decentralization system of governance. Such a system aimed to improve governance and reduce poverty. The DFRD was a result of the 1984-1988 national development plan whose theme was: “mobilise domestic resources for equitable development”.¹⁰¹ The DFRD strategy which was initiated by the government of Kenya in 1983 was to decentralise the planning, management and implementation of district-specific projects from the central government closer to the people affected.¹⁰² This was because the districts were the main stratum of “local” government in the rural areas after the provincial governments were dismantled in the 1960s.¹⁰³ The districts are large units and they are remote from, and not necessarily accountable to ordinary citizens, and their powers are subject to veto by central government.¹⁰⁴ By proposing the establishment of decentralised mechanisms for rural development, the objective of the DFRD was to develop rural Kenya by encouraging broader participation of local communities in order to improve problem

¹⁰¹ André G Coche (ed), *Aquaculture Development and Research in Sub-Saharan Africa: National Reviews*, CIFA Technical paper No. 23 Supplement (FAO, 1994) 183.

¹⁰² Joyce H Poole and Richard E Leakey, ‘Kenya’ in Ernst Lutz and Julian Oliver Caldecott (eds.), *Decentralization and Biodiversity Conservation*, A World Bank Symposium (The World Bank, 1996) 55, <http://books.google.com.au/> (accessed 9 October 2010); Institute of Policy Analysis and Research (IPAR), *District Focus for Rural Development in Kenya: Its Limitation as a Decentralization and Participatory Planning Strategy and Prospects for the Future*, Volume 10, issue 9, 2004. A Policy Brief.

¹⁰³ Paul Smoke, ‘Local Government Fiscal Reform in Developing Countries: Lessons from Kenya’ (1993) 21(6) *World Development* 901, 909.

¹⁰⁴ Joyce H Poole and Richard E Leakey, ‘Kenya’ in Ernst Lutz and Julian Oliver Caldecott (eds.), *Decentralization and Biodiversity Conservation*, A World Bank Symposium (The World Bank, 1996) 55, <http://books.google.com.au/> (accessed 9 October 2010).

identification, mobilization of resources and to enhance utilization of local resources and to develop Kenya equitably.¹⁰⁵ Thus the system was viewed as:

The ultimate objective of decentralization is to transform people's lives and eradicate poverty by devolving political, administrative, and financial powers to the people so that they can effectively control their own destiny and thus render the whole process sustainable.¹⁰⁶

The DFRD required the management of all sectors including fisheries to be devolved to the district. Under District Focus, the Department of Fisheries in consultation with members of the District Development Committees (DDC) were required to identify fisheries development needs at the district level, design development projects and implement them subject to the approval of the DDC review.¹⁰⁷ Although the tuna fishing activities of DWFNs had already commenced in the 1980s, no specific programmes were initiated for the management and development of tuna fisheries. Furthermore, there were various weaknesses of the DFRD. Although the strategy had its achievements, it failed to deliver the appropriate training for local people; funds were inadequate and were not disbursed from the central government to the districts in a timely manner; the mechanisms for reviewing the strategy were not incorporated and there was no involvement of the local people in planning and implementation of projects.¹⁰⁸ The DFRD therefore failed in its role as a decentralisation and participatory planning strategy.

5.4.3 Poverty Reduction Strategy Paper (PRSP) 2001-2004

The *Poverty Reduction and Growth Facility* was established by the International Monetary Fund (IMF) as a low-interest lending facility for low-income States in

¹⁰⁵ Institute of Policy Analysis and Research (IPAR), *District Focus for Rural Development in Kenya: It's Limitation as a Decentralization and Participatory Planning strategy and Prospects for the Future*, Volume 10, issue 9, 2004. A Policy Brief.

¹⁰⁶ Kirubi Maina, *Rural poverty, Decentralization and Development* <http://www.fiuc.org/esap/> (accessed 26 March 2010).

¹⁰⁷ Paul Smoke, 'Local Government Fiscal Reform in Developing Countries: Lessons from Kenya' (1993) 21(6) *World Development* 901, 903.

¹⁰⁸ Institute of Policy Analysis and Research (IPAR) Policy Brief, *District Focus for Rural Development in Kenya: It's Limitation as a Decentralization and Participatory Planning strategy and Prospects for the Future*, Volume 10, issue 9, 2004. Following the failure of the DFRD, recommendations were made for the establishment of a district development service that would integrate development and welfare services at the district level.

1999.¹⁰⁹ Since then, the IMF and World Bank require that, prior to funds being released, respective States subscribing to the *Poverty Reduction and Growth Facility* have to prepare a *Poverty Reduction Strategy Paper* (PRSP).¹¹⁰ The PRSP is a framework for national economic policy and development assistance to the State. It describes the macroeconomic, structural and social policies and programs that the State will pursue over five years to promote growth and reduce poverty, as well as external financing needs and the associated sources of financing.¹¹¹

PRSPs are prepared through a participatory process that involves all stakeholders, and they are reviewed accordingly.¹¹² PRSPs present an opportunity for the interests of individual government sectors to be advanced since they outline the development priorities of States' governments.¹¹³ The interests of the fisheries sector may therefore be articulated in such a policy document. However, Kenya's PRSP does not reflect such priority with respect to the fisheries sector. Instead, the fisheries sector is dealt with in connection with the strategies for the development of agriculture, livestock and environment. It is stated that:

Fresh water and marine fisheries have significant growth potential in improving the livelihood of communities in western and coastal regions of Kenya, and they are a source of foreign exchange earning. The government is committed to developing an enabling environment to ensure sustainability in fisheries development and management. A fisheries policy and master plan is currently under development.¹¹⁴

Although the policy makes a general statement concerning the potential contribution of coastal fisheries as a source of foreign exchange earning, the interests of the sector are not adequately captured and the fisheries sector is still overshadowed under the agricultural sector.

¹⁰⁹ OECD Glossary of Statistical Terms, <http://stats.oecd.org/> (accessed 11 October 2010).

¹¹⁰ Andy Thorpe, Chris Reid, Raymon van Anrooy, and Cecile Brugere, 'Integrating Fisheries into the National Development Plans of Small Island Developing States (SIDs): Ten Years on from Barbados' (2005) 29 *Natural Resources Forum* 51, 52. Apart from the multilateral donor institutions, other bilateral donors are making similar demands as a prerequisite for funding. Funds are provided to States at an annual interest rate of 0.5% and repayable over a period of ten years.

¹¹¹ Fact Sheet, <http://www.imf.org> (accessed 11 October 2010).

¹¹² This includes domestic stakeholders and external development partners, <http://www.imf.org> (accessed 11 October 2010).

¹¹³ FAO, *Integrating Fisheries into the Development Discourse* (FAO, 2007).

¹¹⁴ Republic of Kenya, *Poverty Reduction Strategy Paper*. <http://www.imf.org/> (accessed 11 October 2010).

It is argued that the significance of a sector determines its inclusion into the country's PRSP and mainstreaming into national policy.¹¹⁵ This particularly holds true for a sector that contributes significantly to the economic growth of a State. This is largely true of the agricultural sector in Kenya as will be discussed in the following section. Agriculture is considered important to the growth process of many developing States because of its capability to enhance export earnings and also as a key contributing sector to domestic employment and consumption.¹¹⁶ As a result, all PRSPs of such States recognise the role that agriculture can play in economic growth,¹¹⁷ and thus promote the interests of the sector.

The fisheries sector on the other hand, may not be the principal motor of growth in many developing States like Kenya, as it might not contribute significantly to the national economy. However, the fisheries sector could play an important role in maintaining or enhancing growth rates over time through continued or [sustained] increased stock exploitation, and improvements in value-added within the sector.¹¹⁸ For fisheries to contribute effectively to economic growth, the management strategies for the development of the fisheries sector need to be promoted and implemented within the framework of a State's major national development policies such as the PRSP. Cunningham *et al* point out that, well managed fish resources could make an important renewable contribution to economic growth. However, weak fisheries policy development processes have resulted in many States viewing their fisheries as a problem sector making a low (and declining) percentage contribution to the GDP.¹¹⁹

5.4.3.1 Economic Contribution of the Fisheries Sector to National Economy

Ibarra *et al* argue that, the fisheries sector can have a particularly important role to play in the national development process when fisheries contributes substantially (or

¹¹⁵ FAO, *Integrating Fisheries into the Development Discourse* (FAO, 2007).

¹¹⁶ Andy Thorpe, Chris Reid, Raymon van Anrooy, and Cecile Brugere, 'When Fisheries Influence National Policy-Making: an Analysis of the National Development Strategies of Major Fish-Producing Nations in the Developing World' (2005)29, *Marine Policy* 211, 213.

¹¹⁷ FAO, *A Review of Food Security, Agricultural and Rural Development Issues in PRSPs* (FAO, 2002).

¹¹⁸ Andy Thorpe, Chris Reid, Raymon van Anrooy, and Cecile Brugere, 'When Fisheries Influence National Policy-Making: an Analysis of the National Development Strategies of Major Fish-Producing Nations in the Developing World' (2005)29, *Marine Policy* 211, 213.

¹¹⁹ Cunningham *et al*, 'Perspectives Wealth-Based Fisheries Management: Using Fisheries Wealth to Orchestrate Sound Fisheries Policy in Practice' (2009) 24 *Marine Resource Economics* 271, 273.

could have the potential) to underlying growth processes.¹²⁰ The implication is that the fisheries sector is more likely to be included into the national policy formulation process if it makes a considerable contribution to the national economy, thereby having the potential to promote economic growth. However, if the contribution of fisheries to the national economy of a State is not deemed significant, it is unlikely that the sector will be included in the State's national development policies. This thesis argues that the fisheries sector has not been prioritised for development in Kenya's national policies based on its economic contribution.

It was established earlier in the chapter that Kenya's fisheries sector has tended to be associated with agriculture. Not only has this association failed to adequately prioritise the interests of the fisheries sector, but it has also resulted in the role of the sector and the Department of Fisheries becoming overshadowed. Consequently, the Department of Fisheries has ended up playing a very marginal role which is not dynamic enough to steer development of the fisheries sector.¹²¹ Kenya's major policy documents identify the agricultural sector as the backbone of the national economy and consider agriculture as one of the most important sectors in creating employment and reducing poverty.¹²² The reason for this consideration is based on the contribution of agriculture to the national economy. The agricultural sector which contributes about 24% of GDP and provides about 70% of total employment in Kenya is also seen as key to Kenya's food security.¹²³ The sector contributes 45% of government revenue, while

¹²⁰ A A Ibarra, C Reid, and Andy Thorpe, 'The Political Economy of Marine Fisheries Development in Peru, Chile and Mexico' in Andy Thorpe, *Mainstreaming Fisheries into National Development and Poverty Reduction Strategies: Current Situation and Opportunities*, FAO, Fisheries Circular No. 997 (FAO, 2005). This has been referred to as 'the growth basis for fisheries insertion into national development processes'. For example, the fisheries sector was accorded a central role in Peru's National Development Plan of 1971-76 because of the substantial increase in the exploitation of anchovy stocks from the late 1950s. On the other hand, the squid fishery of the Falkland Islands has experienced immense growth since the 1980s when the value of squid stocks was recognised, earning the sector revenues of up to £27.5 Million annually.

¹²¹ Colin Barnes, *Business Plan for a National Fisheries Development Institution in Kenya*, 2005. Consultancy Report no. 14.

¹²² The Kenyan government in its national development plan of 2000-2008 states that; "agriculture plays a critical role in the national economic growth and development. This role is reflected in, *inter alia*, employment and foreign exchange creation and overall contribution to Gross Domestic Product". See Republic of Kenya, *National Development Plan 2000-2008*. Kenya's PRSP also stresses that; "the government's reform agenda places much emphasis on provision of targeted credit to strategically important sectors such as agriculture....."; "the agriculture sector is the growth sector..." See Kenya, *Poverty Reduction Strategy Paper*.

¹²³ Republic of Kenya, *Economic Report 2009*.

providing for most of the country's food requirements and therefore directly influencing overall economic performance through its contribution to GDP.¹²⁴

Fisheries on the other hand accounted for 0.4% of GDP in 2007 which is minimal compared to the agricultural sector.¹²⁵ Thus, it may be concluded that as a sector, fisheries has not been prioritised in the national policy formulation process on the basis of its economic contribution. Consequently, the fisheries sector has not been prioritised as one of the potential sectors that are significant in promoting Kenya's economic growth. This may be one of the reasons why fisheries, particularly marine fisheries, have not been given sufficient attention as a priority sector for development in Kenya's PRSP.¹²⁶

It was established in chapter 1(1.3) that Kenya derives financial benefits from the tuna resources in its EEZ through license fees remitted by DWFNs and from tuna loin exports. DWFNs harvest as much as 60,000 tonnes of tuna annually from the seasonal migration of tuna through Kenya's EEZ. The tuna processing in Kenya was initiated in 1996 with modest exports of 500-1000 tonnes of tuna loins to Italy which increased to 9,000 tonnes in exports to the EU generally by 2005.¹²⁷ The Kenyan exports represented 12% of the EU import market of pre-cooked tuna loins.¹²⁸

The importance of fisheries to the economy of States can be measured in various ways including, *inter alia*, its contribution to GDP, generation of resources rents, export earnings, license fee receipts, and contribution to food security.¹²⁹ The export of tuna loins from Kenya to the EU generates foreign exchange and is an indication that the

¹²⁴ Agriculture <http://www.pwc.com/> (accessed 23 March 2010).

¹²⁵ Republic of Kenya, *Economic Report 2009*.

¹²⁶ Republic of Kenya, *Poverty Reduction Strategy Paper*. The PRSP accords agriculture such prominence and generalises fisheries under agriculture, livestock and environment. It generally mentions the growth potential fisheries as a means of improving livelihoods and a source of foreign exchange earnings and commits the Government to the development of an enabling environment for sustainability in its development and management.

¹²⁷ Oceanic Development, Megapesca Lda (2007). *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

¹²⁸ Some of the tuna loins are exported to France. See 'Kenya Considers Foreign Investment to Exploit its Tuna Fishing Potential' <http://www.atuned.biz/public/ViewArticle.asp?> (accessed 30 March 2010).

¹²⁹ Andy Thorpe, Chris Reid, Raymon van Anrooy, and Cecile Brugere, 'Integrating Fisheries into the National Development Plans of Small Island Developing States (SIDs): Ten Years on from Barbados' (2005) 29 *Natural Resources Forum* 51, 53; Report on the impact of Flags and Ports of non-Compliance in the SADC Region- Stop Illegal Fishing Programme.

tuna fishery can contribute to Kenya's national development process through exports.¹³⁰ At the national level, tuna canning provides employment to Kenyan nationals. Furthermore, the main tuna fishing grounds for purse seiners are to be found to the east and northeast of Kenya's EEZ and in the Mozambique Channel,¹³¹ while the main tuna fishing ground for longliners are in the same location in relation to Kenya's EEZ.¹³² The proximity of Kenya's EEZ to these tuna rich waters provides the potential for development of its tuna fisheries.

Although Kenya aspires to develop its tuna fisheries, it will be necessary to evaluate the economic contribution of the marine capture fisheries as a whole, and particularly tuna fisheries, to the national economy if the fisheries sector is to attract the aspired government support, including cooperation from other sectors. For its tuna fisheries to make a significant economic contribution, Kenya will not only need to establish an effective policy development process for further development of tuna fisheries, but also to develop an effective management regime. The Department of Fisheries on the other hand, will need to attract the necessary political support and provide legal backing of the sectoral policies.

5.4.3.2 Administrative Weaknesses

The role of institutions for success in fisheries management is important.¹³³ Aside from the role of policy development processes, adequate legislation and political support, another fundamental aspect underpinning the management and development of tuna fisheries in Kenya is the nature of the institution mandated to manage the fisheries sector. As earlier stated, this role is taken up by the Department of Fisheries. Usually, the importance and independence of such an institution depends on the perceived importance of fisheries to the national economy.¹³⁴ In most developing States, it is usual to subordinate fisheries within a department of agriculture or natural resources

¹³⁰ FAO, *Integrating Fisheries into the Development Discourse*, Regional Office for Asia and Pacific Bangkok, Thailand, (FAO, 2007).

¹³¹ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

¹³² Ibid.

¹³³ World Bank, *Good Management Practice in Sustainable Fisheries*, Policy Brief. <http://www.onefish.org/> (accessed 25 October 2010).

¹³⁴ Sean P Marriott, 'Fisheries Institutional Reform in Developing Countries' (1997) 21(5) *Marine Policy* 435, 436.

development,¹³⁵ as in the case of Kenya discussed above. The low status of fisheries ministries (or departments) has often been cited as a root cause for their generally poor administrative performance.¹³⁶

This is true of Kenya's Department of Fisheries. Over the years, the Department of Fisheries has been moved from one government ministry to another.¹³⁷ Not only has this movement immensely destabilised the operations and effectiveness of the Department of Fisheries, but it also demonstrates the low priority accorded to the fisheries sector as a whole. This has been coupled with low priority of the sector in terms of funding allocation and with no coherent development plan,¹³⁸ making it difficult for the Department of Fisheries to carry out its objectives of food production and fisheries management and development since it was not the core business of that particular ministry. These issues have adversely affected the growth and development of Kenya's fisheries sector of which the tuna fisheries are a part.

The changing political regimes in Kenya over the last decade have had an effect in shaping its fisheries policies. Kenya has undergone major political changes since the advent of multiparty politics in 1991. Among these changes was the amendment of the constitution in 2008, to establish a coalition government and the position of Prime Minister.¹³⁹ As a result, changes have occurred considerably, not only in the focus of the national development policies and fisheries sector plans, but also in the administration of fisheries. As noted in chapter 5.2.4 and the following sections, Kenya has articulated fisheries policy and development plans to reflect its aspirations in the development of tuna fisheries through the establishment of, among others, the National Oceans Policy which promotes modern principles of fisheries management such as ecosystem management and the precautionary approach. In addition, various development policies

¹³⁵ Ibid.

¹³⁶ Ibid.

¹³⁷ Nancy Gitonga and Robin Achoki, *Fiscal Reforms for Kenya Fisheries*, A paper presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004). The Ministries in which the fisheries department was placed include; Tourism and Wildlife, Natural Resources, Livestock and Fisheries Development, Regional Development and Agriculture and Rural Development.

¹³⁸ Nancy Gitonga and Robin Achoki, *Fiscal Reforms for Kenya Fisheries*, A paper presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

¹³⁹ Michelle D Gavin, *Policy Options Paper-Kenya*, 2008.

and fisheries strategic plans which clearly reflect Kenya's aspirations for the management and development of tuna fisheries have been established. An examination of these plans follows.

5.4.4 The Economic Recovery Strategy for Wealth and Employment Creation (ERS)

In 2002 there was a major change of Government in Kenya and also in the objectives of Kenya's national development policies. The Interim Poverty Reduction Strategy Paper was replaced by the *Economic Recovery Strategy for Wealth and Employment Creation* (ERS).¹⁴⁰ The ERS is a development policy which aims to restore the economy and create employment. The ERS identifies sustainable management of the natural commons as one of its priority areas, recognises the fisheries sector as a foreign exchange earner and acknowledges the role played by marine fisheries in improving the livelihoods of communities of the coastal regions of Kenya.¹⁴¹

The Kenyan government commits to entering into agreements to promote closer regional cooperation in the management and regulation of transboundary fisheries resources. It can be assumed that tuna fisheries are included in this category of fisheries resources owing to their status as highly migratory species. The government also commits to developing an enabling environment to ensure sustainability in fisheries development and management,¹⁴² a slight improvement from the strategies outlined in the PRSP.

5.4.4.1 Strategy for Revitalizing Agriculture 2004-2014

The *Economic Recovery Strategy for Wealth and Employment Creation* (ERS) emphasized the revitalization of agriculture as the engine of growth for Kenya's economy.¹⁴³ The development of the *Strategy for Revitalizing Agriculture* which hinges

¹⁴⁰ S Walmsley, J Purvis and C Ninnes, 'The Role of Small-scale Fisheries Management in the Poverty Reduction Strategies in the Western Indian Ocean region' (2006) 49 *Ocean & Coastal Management* 812, 820. The ERS has since been succeeded by "Kenya Vision 2030" since 2007.

¹⁴¹ Republic of Kenya, *The Economic Recovery Strategy for Wealth and Employment Creation*.

¹⁴² Republic of Kenya: *Poverty Reduction Strategy Paper, Investment Programme for the Economic Recovery Strategy for Wealth and Employment Creation 2003-2007*(March 2004).

¹⁴³ Agriculture contributes 26% of GDP and 60% of export earnings. Agriculture is the main source of livelihood for the rural population making up 80% of the total population of Kenya. With 56% of Kenyans living below the poverty line, 80% of them are in rural areas.

upon both the ERS and the PRSP is consistent with the ERS in this respect. This strategy was formulated at the stage when the Department of Fisheries was moved to the *Ministry of Livestock and Fisheries Development* in 2003, to create an enabling framework for the sustainable development of the both agriculture and the fisheries sector. The policy is aimed at developing agriculture into a profitable economic activity that can attract private sector investment and provide employment.¹⁴⁴

The significance of this strategy for tuna fisheries is that, it is a policy document from which a comprehensive strategic plan specifically for Kenya's fisheries has been developed, even though the fishery sector was still submerged in the Ministry of livestock and Fisheries Development at this stage. The strategy identifies the lack of capital and equipment as the main constraints that inhibit Kenya's participation in [tuna] fishing. It also emphasises the need to utilise [tuna] resources and recommends that Kenya's capacity for surveillance ought to be increased.¹⁴⁵ It is pointed out in the strategy that, the utilisation of [tuna] resources can only be achieved through concerted efforts to lobby for the implementation and translation of the relevant provisions of the LOSC into national policy and legislation.¹⁴⁶ This is the first time that a development policy in the fisheries sector has acknowledged the role of international law in the management and development of tuna fisheries. It is also noted that one of the strategies for improving delivery of support services, is to develop the potential of the fishing industry fully. The strategy prioritises the development of measures for licensing of fishing vessels to operate in the EEZ as the most appropriate intervention for achieving the development of the fishing industry.¹⁴⁷

5.4.4.2 Fisheries Strategic Plan for Kenya 2006-2011

The formulation of the *National Strategic Plan for Rapid Development of the Fishing Industry* is a major achievement for the fisheries sector following the formation of the *Ministry of Livestock and Fisheries Development* and the development of the *Strategy for Revitalizing Agriculture*. This policy document which is also consistent

¹⁴⁴ FAO, *Kenya: National Medium –Term Investment Programme*, 2004: New Partnership for Africa's development-Comprehensive Africa Agriculture Development Programme. <http://www.fao.org> (accessed 20 January 2010).

¹⁴⁵ Republic of Kenya, *Strategy for Revitalizing Agriculture 2004-2014* (2004) 8.

¹⁴⁶ Ibid 41.

¹⁴⁷ Ibid 102.

with the ERS articulates the mandate, vision, mission, core values, core functions, policy priorities and organizational structure of Kenya's Department of Fisheries for the period 2006 to 2011.¹⁴⁸ The mandate of the strategy is derived from the *Fisheries Act 1989* and the *Maritime Zones Act 1989*.¹⁴⁹ The strategy has a vision; 'to have a dynamic fishery industry with a potential to contribute towards food security, employment and generate wealth among fishers'.¹⁵⁰ Its mission is 'to facilitate sustainable management and development of the fishery resources and products for socio-economic development in an ecologically viable environment'.¹⁵¹

The document sets out the strategic issues that need to be addressed in the fisheries sector including weak policy and legal framework; poor access to markets; low productivity; weak monitoring and evaluation framework; inadequate information technology; weak institutional capacity and corruption.¹⁵² Regarding weak policy and legal framework, it is recognised that lack of a comprehensive national fisheries policy in the past, has reduced the effectiveness of management and research, discouraged investment in the sector and constrained growth. In addition, the need to revise Kenya's Fisheries Act is pointed out.¹⁵³

The strategy provides a budget for funding the implementation of its objectives and emphasizes the need for resource mobilization to fund all the proposed activities.¹⁵⁴ It promotes private-sector investment in the fisheries sector for the development of infrastructure, promotion of the development of value added activities and industries,

¹⁴⁸ Republic of Kenya, *National Strategic Plan for Rapid Development of Fishing Industry 2006-2011*(2006).

¹⁴⁹ The *Maritime Zones Act 1989* sets out Kenya's maritime zones of jurisdiction in accordance to the provisions of the LOSC. It defines the maximum breadth and boundaries of the territorial sea and EEZ. The sovereign rights of Kenya in the EEZ are also elaborated in accordance to the provisions of the LOSC. These rights include the exploration and exploitation of the zone for the production of energy, preservation of the marine environment and control of scientific research. The Act also elaborates the rights of other States with regard to the EEZ and settling of disputes. In this respect it provides that, 'all States shall enjoy navigation and over-flight, laying of submarine cables and pipelines and other lawful uses' in the EEZ. Regarding disputes, 'any offence, question or dispute of a civil nature concerning or arising out of, any act which occurs in the EEZ in connection with exploration and exploitation, or conservation and management of the sea-bed and subsoil or natural resources shall be subject to the jurisdiction of the courts of Kenya'.

¹⁵⁰ Republic of Kenya, *National Strategic Plan for Rapid Development of Fishing Industry 2006-2011*(2006).

¹⁵¹ Ibid.

¹⁵² Ibid.

¹⁵³ Ibid.

¹⁵⁴ Ibid.

and the establishment of cold storage facilities for fisheries.¹⁵⁵ An organisational structure and monitoring framework form part of this strategy.

Unlike the development plans and policies that were established in the 1960s, the fisheries management strategies that have been formulated in Kenya in the last decade have changed noticeably in their approach. These strategies appear to be more focused with respect to the objectives of the marine capture fisheries sector concerning the management and development of tuna fisheries. The strategies also acknowledge the potential for tuna fisheries to contribute to Kenya's economy and for food security. The Strategy for Revitalizing Agriculture for example, recognises that the management of tuna fisheries is subject to international legal rules, and emphasises the need to lobby for the implementation and translation of the relevant provisions of the LOSC into national policy and legislation in order for tuna fisheries to be utilised sustainably. Both the Strategy for Revitalizing Agriculture and the Fisheries Strategic Plan for Kenya consider sustainability and ecological soundness as vital for the preservation of ecosystem integrity which is fundamental to the management of tuna fisheries. In as much as these fisheries objectives have been articulated in these management strategies, their effectiveness can only be assessed through implementation.

5.4.4.3 Developments in the Fisheries Sector

In addition to the developments of the more recent national development strategies and fisheries specific plans, there have been other positive achievements in Kenya's fisheries sector as a result of the current political changes. Most significant, is the establishment of the Ministry of Fisheries Development which was set up in 2008.¹⁵⁶ This can be viewed as a real turning point for fisheries management in Kenya. The establishment of the Ministry of Fisheries Development presents an opportunity for the sector to assert itself. It can be assumed that the establishment of a ministry fully devoted to the management and development of fisheries will facilitate the identification and implementation of strategies that promote the management and sustainable utilisation of Kenya's tuna resources. This may for example, catalyse the implementation of the *National Oceans and Fisheries Policy* which has clearly stated

¹⁵⁵ Ibid.

¹⁵⁶ The Ministry of Fisheries Development was set up through the Presidential Circular No. 1 of 2008. See *National Oceans and Fisheries Policy*, 2008 of the Republic of Kenya Section 2.8.1.

the objectives concerning the management and sustainable development of Kenya's tuna fisheries, and other related strategies within the sector.

However, as a newly established government ministry the financial and institutional capacity required to achieve its goals are quite substantial considering that the operations of the Department of Fisheries have been hampered by insufficient funds in the past as previously discussed. The changes required within the fisheries sector, and particularly for the management of tuna fisheries, may therefore not be effected immediately. It will take time and political commitment to bring about the institutional changes required for the effective implementation of the objectives of the fisheries sectoral plans. Nonetheless, the Ministry's efforts will need to be supported by an adequate and appropriate legislation in order to bring tuna into an effective management framework.

The extent to which government policy-makers recognise the value of fisheries is fundamental to fisheries management performance.¹⁵⁷ There remains a need for the Ministry to establish the economic evaluation of the contribution of fisheries as a whole to national economic growth so as to attract government support and sufficient budgetary allocations. This will also enable the sector to be adequately prioritised within national development policies. It will also be necessary for Kenya to reflect the value of tuna fisheries in economic policies such as the ERS and national development plans in order for government decisions to take account of the economic benefits that tuna fisheries can provide. There is a need for Kenya to ensure the implementation of the national strategies it develops which are aimed at the management and development of tuna fisheries. Kenya needs to articulate the issues it has prioritised in this respect, in its national fisheries legislation and to implement them accordingly.

5.5 Conclusion

In this chapter, the framework for managing fisheries in Kenya has been examined. The chapter demonstrated that Kenya's fisheries laws and regulations fail to provide the legal basis for the establishment of appropriate management arrangements for tuna fisheries. However, the formulation of the National Oceans and Fisheries

¹⁵⁷ FAO, *A Feasibility Study for a Programme on Strengthening Fisheries Management in ACP Countries: A Sectoral Approach* (FAO, 2003)9. Support Unit for International Fisheries and Aquatic Research- SIFAR.

Policy is an immense contribution to the management of tuna fisheries in Kenya, and it reflects Kenya's efforts to provide guidance for managing and developing its tuna resources in the EEZ in a more responsible and sustainable manner. While this initiative is commendable, Kenya still has to make efforts to put it into effect in order to fulfil its aspirations to develop its tuna fisheries. Thus, the effectiveness of the National Oceans and Fisheries Policy rests ultimately on the ability of the government to provide the enabling legislation.

It is also seen that, the development of fisheries has generally not been well articulated in the government strategies, and that Kenya has not adequately considered the marine capture fisheries sector in national policy development. Kenya's development interests in fisheries have focused on the inland freshwater capture fisheries while the marine capture fisheries sector has had no considerable influence in Kenya's national development processes. This situation may be attributed to a number of factors. There is evidence to suggest that marine capture fisheries are not a critical component of Kenya's economy. This chapter argued that, if the economic valuation of tuna fisheries is not deemed significant, then its contribution to the national economy is assumed inconsequential. As a result, tuna fisheries have not been prioritised for development. This has been a contributing factor to the inadequacies reflected in Kenya's fisheries legislation regarding the management of its tuna resources. Additionally, the substantial financial investment required to develop [tuna] marine fisheries will require the active participation of the private sector as proposed in the fisheries policy and the fisheries strategic plan for Kenya.

The management and sustainable development of tuna fisheries in Kenya is underpinned by an effective fisheries legislative framework. The following chapter analyses the national implementation of Kenya's international and regional obligations for the management of tuna fisheries.

CHAPTER 6

KENYA'S NATIONAL IMPLEMENTATION OF INTERNATIONAL AND REGIONAL OBLIGATIONS ON TUNA MANAGEMENT

6.1 Introduction

Kenya committed to the conservation and sustainable utilisation of the marine resources under its national jurisdiction by extending its maritime jurisdiction as a result of the adoption of the LOSC in 1982. Consequently, Kenya has a duty to conserve, manage and sustainably utilise the tuna resources in its EEZ.¹ Kenya is also under a duty to cooperate with other States participating in tuna fisheries in the region in seeking to adopt conservation and management measures for tuna fisheries in its EEZ and beyond.² Such cooperation is to be achieved through the IOTC. As a member of the IOTC, Kenya is not only required to participate in its work, but also to comply with, and implement the tuna conservation and management measures adopted by the IOTC which are binding on Kenya.

Kenya's legal and policy framework is instrumental in providing a basis for the implementation of effective conservation and management measures necessary to promote the long-term conservation and sustainable utilisation of tuna resources in its EEZ. Kenya might move towards that goal by responding to its international and regional obligations.

This chapter analyses Kenya's legal and policy framework relative to the management and conservation of the tuna resources in Kenya's jurisdiction, as well as the fisheries management practices in order to determine the scope of compliance with international obligations. The chapter also provides legal and policy recommendations which could enhance Kenya's governance framework by improving the application of the measures that Kenya has adopted for the conservation and management of tunas. These measures which are derived from the set of criteria formulated in chapters 2 and 4 include the determination of total allowable catch (TAC), data contribution and sharing, and compliance and enforcement and their implementation in respect to tuna conservation.

¹ LOSC, Arts. 61 & 62; *UN Fish Stocks Agreement*, Art. 5, 6 & 7.

² LOSC, Arts. 63, 64, 117 and 118; *UN Fish Stocks Agreement*, Art. 8.

This chapter finds that, although Kenya is a State Party to the LOSC and the UN Fish Stocks Agreement, it has not fully implemented these instruments. Similarly, Kenya has not fully implemented the tuna conservation and management measures adopted by the IOTC.

6.2 Species Conservation

As shown in chapter 2(2.4.1) and 4(4.2.1), the legal rules provided by the LOSC and the UN Fish Stocks Agreement obligate Kenya to ensure through proper conservation and management measures that the maintenance of the tuna resources under its jurisdiction are not endangered by over-exploitation.³ Kenya is also required to utilise such resources optimally without prejudice to their conservation,⁴ and to take into consideration the effects on species associated with or dependent on tunas.⁵ Kenya may also implement the principles of the FAO Code of Conduct regarding responsible fisheries.

The IOTC has also adopted tuna conservation measures that are binding on Kenya in this regard. Concerning tuna (target species), the IOTC has adopted measures in respect of fishing capacity, fishing effort, and setting catch limitations. The non-target species for which IOTC has adopted measures include marine turtles, seabirds and sharks. Other measures directed at the conservation and management of tuna include data contribution and sharing, and compliance and enforcement.

6.2.1 Conservation of Target Species

The objective of the *Fisheries Act 1989* is “to provide for the development, management, exploitation, utilisation and conservation of fisheries and for connected purposes”.⁶ This statement can be viewed as a reaffirmation to a general commitment to the conservation of fisheries resources including tuna. The following subsections discuss and analyse Kenya’s implementation of the conservation and management measures adopted by IOTC for tuna with a view to determining their consistency with the international and regional requirements.

³ LOSC, Art. 61(2).

⁴ LOSC, Art. 62(1).

⁵ LOSC, Art. 61 (4); *UN Fish Stocks Agreement*, Art. 5(b) and (e).

⁶ The *Fisheries Act 1989*.

6.2.1.1 Management of Fishing Capacity and Fishing Effort

Cunningham and Greboval define management of fishing capacity as “the implementation of a range of policies and technical measures aimed at ensuring a desired balance between fishing inputs and production from capture fisheries”.⁷ Hence, at the national level, capacity management may be defined as the attempt of a State to harmonise the harvesting potential of its fleet with the desired level of output from its fisheries.⁸ The IOTC requires Kenya to notify to the IOTC Secretariat, the lists of vessels, by gear type, over 24 meters overall length and over, and under 24 meters if it fished outside the EEZ.⁹ It was seen in chapter 1 that Kenya has only two vessels flagged to it operating in the EEZ.

The FAO Code of Conduct addresses the issue of excess fishing capacity and states that; “States should prevent overfishing and excess fishing capacity and should implement management measures to ensure that fishing effort is commensurate with the productive capacity of the fishery resources and their sustainable utilisation”.¹⁰ To manage fishing capacity in compliance with the FAO Code of Conduct, the FAO has developed a voluntary International Plan of Action (IPOA). The IOTC recognises the objectives and principles of the FAO International Plan of Action for the Management of Fishing Capacity.¹¹ As Kenya has committed to implement the FAO Code of Conduct,¹² and is a contracting Party to the IOTC, Kenya may implement the provisions of the FAO Code of Conduct in respect of fishing capacity for its tuna fishery.

⁷ Steve Cunningham and Dominique Greboval, *Managing Fishing Capacity: A Review of Policy and Technical Issues*, FAO Fisheries Technical Paper No. 409 (FAO, 2001).

⁸ Yu Huiguo and Yunjun Yu, ‘Fishing Capacity Management in China: Theoretic and Practical Perspectives’ (2008) 32 *Marine Policy* 351, 351.

⁹ IOTC, Resolution 09/02, ‘*On the Implementation of a Limitation of Fishing Capacity of Contracting Parties and Cooperating non-Contracting Parties*’, para 1.

¹⁰ The FAO Code of Conduct, Article 6(6.3). Further, Article 7(7.1.8) States are encouraged to take measures to prevent or eliminate excess fishing capacity and to ensure levels of fishing effort are commensurate with sustainable use of fishery resources as a means of ensuring the effectiveness of conservation and management measures. In addition, Article 7(7.6.3) States that; “where excess fishing capacity exists, mechanisms should be established to reduce capacity to levels commensurate with the sustainable use of fisheries resources....Such measures should include monitoring the capacity of fishing fleets”.

¹¹ IOTC, Resolution 03/01, ‘*On the Limitation of Fishing Capacity of Contracting parties and Cooperating non-Contracting Parties*’; IOTC, Resolution 09/02, ‘*On the Implementation of a Limitation of Fishing Capacity of Contracting Parties and Cooperating non-Contracting Parties*’.

¹² Kenya has been a participant in the relevant meetings concerning the formulation of the Code of Conduct, including the Rome Declaration on the Implementation of the Code of Conduct on Responsible Fisheries held in Rome 10-11 March 1999.

Fishing capacity is directly related with the terms of access to a fishery. For this reason, it is necessary to analyse the prevailing access conditions to the fishery in order to design adequate policies for the management of fishing capacity.¹³ Capacity management measures can be categorised into two major groups, namely input controls and output controls.¹⁴ Input controls aim to contain or reduce the level of harvesting capacity by limiting or reducing the level of inputs deployed to the fishery and may include; licensing limitations, gear control and restrictions on fishing activity levels.¹⁵ Output controls are concerned with limiting the quantity of fish that may be landed and may include catch quotas or size limits.¹⁶

As previously discussed in chapter 5 (5.5.3.1), foreign access to tuna resources in Kenya's EEZ is regulated by direct licensing of foreign fishing vessels. Such vessels in Kenya are required to obtain a fishing vessel license before they participate in any fishing operations in Kenya fishery waters.¹⁷ This is one of the measures in restriction to the capacity of fleets operating in Kenya's EEZ. Although Kenya regulates its tuna fishery through a licensing system, the licenses for foreign vessels are not based on any parameters (e.g. catch, stock status or vessels size),¹⁸ and the level of fishing by the foreign fleets is unclear.¹⁹ License limitations can be used to limit the numbers and size of vessels that can participate in a fishery.

In Kenya, a tuna fishing licence is granted to all foreign fishing vessels whose owners submit a request to the Director of Fisheries,²⁰ even though the status of the tuna stocks is unclear.²¹ According to the data submitted from the foreign fishing vessels an

¹³ Steve Cunningham and Dominique Greboval, *Managing Fishing Capacity: A Review of Policy and Technical Issues*, FAO Fisheries Technical Paper 409 (FAO, 2004) 2.

¹⁴ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) 5.

¹⁵ Ibid; Yu Huiguo and Yunjun Yu, 'Fishing Capacity Management in China: Theoretic and Practical Perspectives' (2008) 32 *Marine Policy* 351, 352.

¹⁶ James Joseph, *Managing Fishing Capacity of the World Tuna Fleet*, FAO Fisheries Circular No. 982 (FAO, 2003) 5.

¹⁷ The Fisheries (Foreign Foreign Fishing) Craft regulations, Section 3.

¹⁸ Johnson Kariuki, 'Country Review: Kenya' in 'Review of the State of World Marine Capture Fisheries Management: Indian Ocean', FAO Technical Paper 489 (FAO, 2005).

¹⁹ MRAG, *Control of Foreign Fisheries Policy Brief: Kenya* (2006). <http://www.fao.org/docs/eims/upload/agrotech/> (accessed 7 February 2011).

²⁰ Johnson Kariuki, Former Assistant Director of Fisheries, Personal communication 12 March 2007. Many of the foreign fishing vessels are known to be operating in Kenya illegally. See also, *Fishery Country Profile of Kenya* at <ftp://ftp.fao.org/> (accessed 12 February 2011).

²¹ Colin Barnes, *Business Plan for a National Fisheries Development Institution in Kenya* (2005).

average of eighty tons of tuna is taken from Kenya's EEZ annually.²² Although the fisheries Act requires the Director to specify the period of validity of the foreign fishing vessel license,²³ some of the licenses granted to foreign fishing vessels lack the vital information for determining the duration of validity.²⁴ The duration of a license is fundamental in controlling of access to the fishery, and thereby limiting fishing capacity. The lack of consideration of these conditions may be based on the fact that licensing of foreign fishing vessels is considered more as a revenue raising tool as opposed to limiting fishing capacity. The absence of regulatory provisions on such specific conditions upon which foreign fishing licenses may be issued augments the difficulty of monitoring the fishing capacity.

6.2.1.1.2 Implementing the International Plan of Action on Fishing Capacity

License limitation alone is not adequate to reduce capacity in Kenya's EEZ, and other mechanisms are required to control the rate of increase in capacity.²⁵ In order to achieve an efficient management of fishing capacity, Kenya may implement the International Plan of Action on fishing capacity (IPOA-Capacity),²⁶ by developing a national plan of action (NPOA) to manage fishing capacity. The main objective of the IPOA-Capacity is for States and regional fisheries organisations to achieve an efficient, equitable and transparent management of fishing capacity.²⁷ There are two major actions that Kenya needs to undertake in order to achieve the objectives of the IPOA-Capacity.

First, Kenya needs to conduct a preliminary assessment of the capacity situation in its tuna fisheries and the fishing fleets operating in its EEZ, in order to identify the issues that require management.²⁸ Through such an assessment, Kenya may be able to identify aspects of the fleets or the tuna fishery where fishing capacity may pose a threat

²² Data and Statistics <http://www.iotc.org/> (accessed 22 February 2010).

²³ The *Fisheries Act 1989*, Section 13.

²⁴ Evanson Chege Kamau, Andrew Wamukota and Nyawira Muthiga, 'Promotion and Management of Marine Fisheries in Kenya' in Gerd Winter (ed), *Towards Sustainable Fisheries Law: A Comparative Analysis* (IUCN, 2009) 122.

²⁵ FAO, *Report of the Expert Consultation on Catalysing the Transition away from Overcapacity in Marine Capture Fisheries*, Rome, 15-18 October 2002.

²⁶ FAO, *International Plan of Action for the Management of Fishing Capacity*, hereinafter *IPOA-Capacity*, Adopted by the Twenty-third Session of COFI in February 1999.

²⁷ The *IPOA-Capacity* is voluntary.

²⁸ FAO, *IPOA-Capacity*, para 8(i).

to the sustainability of its tuna resources. For an assessment exercise to be carried out effectively, appropriate data on the fishing fleets (e.g. national record of fishing vessels) and the tuna fishery (e.g. catch and effort data) will be needed. Kenya may need to prepare immediate actions if the assessments find that the tuna fisheries require urgent measures.²⁹ Kenya needs to cooperate through the IOTC (regional) and collaborate with the FAO (international) in similar preliminary assessments of fishing capacity.³⁰ Secondly, Kenya will need to develop and implement a National Plan of Action to effectively manage fishing capacity in its tuna fishery.³¹ It is necessary to monitor the fishing capacity systematically and accurately, in order to identify any imbalances between capacity and the tuna resources.³² Fishing capacity ought to be balanced with the available tuna resources. The NPOA is to be monitored and reviewed every four years in order to enhance its effectiveness.³³ Kenya is also required to report to the FAO on assessment, development and implementation of the NPOA for the management of fishing capacity biennially.³⁴

6.2.1.1.3 Implementing Total Allowable Catch

Licence limitation may also be complemented with TACs. As demonstrated in chapter 2(2.4.1), one of the conservation and management obligations under the LOSC for Kenya to manage the tuna resources in its EEZ, is the determination of the total allowable catch (TAC).³⁵ The IOTC has not adopted measures regarding quotas or TAC. However, The TAC is a vital tool employed to limit the commercial exploitation of fish stocks and may be instrumental in complementing Kenya's license limitation efforts in respect of fishing capacity in the tuna fishery. As previously discussed licenses for foreign fishing vessels in Kenya are not based on any parameters. Thus, there are no tuna catch limits imposed on these vessels.

Currently, the *Fisheries Act* does not specifically provide for the determination of the TAC for the tuna resources within the Kenyan EEZ. However, the *Fisheries Act*

²⁹ FAO, *IPOA- Capacity*, para 14.

³⁰ FAO, *IPOA- Capacity*, para 15.

³¹ FAO, *IPOA- Capacity*, para 19.

³² FAO, *IPOA- Capacity*, para 20.

³³ FAO, *IPOA- Capacity*, para 24.

³⁴ FAO, *IPOA- Capacity*, para 44.

³⁵ *LOSC*, Art. 61(1).

inherently alludes to the existence of a TAC under section 12(2(a) & (b)) which is concerned with the licensing of foreign fishing vessels. According to the *Fisheries Act*, “the Director may issue a foreign fishing vessel license if he has determined that there are fishery resources surplus to the Kenya fishing industry which may be harvested under license;³⁶ and he has determined the quantity of the surplus that may be harvested and indicates the quantity as a condition of the license”.³⁷ The *Fisheries Act* further states that; the Director may grant a license to the owner of a foreign vessel in respect of which an application has been made if the Director has made findings required by section 12(2) of the Act.³⁸ The fact that the Director refers to the quantity of the surplus that a foreign fishing vessel could harvest as a condition of the license presumes that a harvest level (an allowable catch) has been determined beforehand.

The *Fisheries Act* further refers to the allowable catch in connection with its requirement for fishing States to submit a fishing plan. In this respect, the *Fisheries Act* states that; “the diplomatic representatives of any State in respect of which the Director has made an apportionment of the allowable catch for a foreign fishing craft under section 12(2) of the Act in respect of any fishery in the exclusive economic zone may from time to time submit to the Director a fishing plan that complies with this regulation”.³⁹ Additionally, the *Fisheries Act* requires the fishing plan to outline the proposals for taking from the Kenyan fishery waters the State’s apportionment, including an exact number of fishing crafts from that State that will be engaged in fishing activities in the EEZ.⁴⁰ The implication of this provision is that, the size of the fishing fleet licensed to fish in the EEZ will be commensurate with the level of the apportioned share of the allowable catch.

Another provision of the *Fisheries Act* which suggests the existence of a TAC is concerned with quotas. Under Section 33 of the *Fisheries (Foreign Fishing Craft) Regulations*, the diplomatic representative of a fishing State to which an apportionment has been made is required to notify the Director once the fishing vessels of that State have fully harvested their allocation of the allowable catch in respect of any fishery in

³⁶ The *Fisheries Act 1989*, Section 12(a).

³⁷ The *Fisheries Act 1989*, Section 12(a).

³⁸ The *Fisheries (Foreign Fishing Craft) Regulations*, Section 6(1)(f).

³⁹ The *Fisheries (Foreign fishing craft) Regulations*, Section 7(1).

⁴⁰ The *Fisheries (Foreign fishing craft) Regulations*, Section 7(2)(b).

the EEZ as has been apportioned to the fishing vessels of his State.⁴¹ *The Fisheries (Foreign Fishing Craft) Regulations* further qualify the above provision by adding that it applies also to specifications limiting the amount of catch and fishing methods in certain areas.⁴² Although reference is made to an allowable catch, there is no express provision under the wording of the current Fisheries Act imposing any catch limits or a total allowable catch. There are no records either, to indicate that the determination of TACs takes place in practise.⁴³ To fulfil its international obligation regarding the determination of TAC, Kenya will need to address this gap in its fisheries legislation.

Kenya could enact legislation or promulgate regulations that provide for the requirement to determine a TAC for vessels operating in its EEZ. Such a provision could empower the Minister to determine the allowable catch for designated fisheries such as tuna. The Fisheries legislation of some States, for example New Zealand has specific provisions concerning TACs.⁴⁴ The New Zealand Fisheries Act, empowers the Minister to set the TAC, and identifies the criteria that should be taken into consideration when determining the TAC.⁴⁵ Similarly, the Territorial Sea and Exclusive Economic Zone Act of Niue, also requires the Cabinet to determine the total allowable catch by apportioning the catch between Niue fishing vessels and foreign fishing vessels.⁴⁶ By determining the TAC and the harvesting capacity, Kenya would be able to establish the existence of a surplus and consequently allocate the surplus to other States as required by the LOSC.⁴⁷

As the Director of Fisheries has the power to impose the conditions of a fishing license,⁴⁸ catch and size limits for specific tuna species and gears could be conditions of the licence. Capacity limits could be made more effective if they are combined with catch limits. By combining capacity limits with catch limits, this would not only reflect a limit on the number of vessels that are able to operate in Kenya's EEZ, but also limit

⁴¹ *The Fisheries (Foreign fishing craft) Regulations*, Section 33(a).

⁴² *The Fisheries (Foreign fishing craft) Regulations*, Section 33(b).

⁴³ Evanson Chege Kamau, Andrew Wamukota and Nyawira Muthiga, 'Promotion and Management of Marine Fisheries in Kenya' in Gerd Winter (ed), *Towards Sustainable Fisheries Law: A Comparative Analysis* (IUCN, 2009)103.

⁴⁴ *The Fisheries Act 1996 of New Zealand*, Sections 13 &14.

⁴⁵ *The Fisheries Act 1996 of New Zealand*, Section 13 (2).

⁴⁶ *The Territorial Sea and Exclusive Economic Zone Act 1978 of Niue*, Part II, para 11.

⁴⁷ *LOSC*, Art. 62(2).

⁴⁸ *The Fisheries (Foreign fishing craft) Regulations*, Section 10.

the catch that they can take. Concerning fishing effort, Kenya is required to ensure that the efforts of vessels of non-Members of the IOTC harvesting bigeye in its EEZ are reduced to 1999 levels. At present, Kenya has not met this obligation as it has no regulations on any of the tuna species.

6.2.1.2 Setting Catch Limits

The IOTC requires Kenya to regulate the catch of bigeye by vessels of CPCs operating in its EEZ to the levels of catch reported by the Scientific Committee.⁴⁹ Further, Kenya is required to impose an annual bigeye catch limit of 35,000 tonnes on Taiwanese vessels operating in its EEZ.⁵⁰

Kenya has no provisions on tuna catch limits whatsoever. It may be that such limitations are given as a condition of the licence.

6.2.2 Conservation of Non-Target Species in Tuna Fisheries

As previously discussed in chapter 4 (4.2.1.2), fisheries targeting tuna can result in the incidental catch and mortality of non-target species caught as bycatch, thereby having significant ecological and economic implications.⁵¹ In chapter 2(2.2), it was seen that tunas display a strong schooling behaviour at different life stages, during spawning and also when foraging.⁵² Such schools which are made up of different species of tuna, other fishes, marine mammals and birds usually aggregate as multispecies groups, although tunas are usually the most abundant.⁵³ Other species that associate with tunas, may not necessarily be members of multispecies aggregations, but they may be members of the flotsam community or tuna forage.⁵⁴ These species that either associate or depend on tuna make up part of the non-target species that may be captured in tuna

⁴⁹ IOTC, Resolution 05/01 'On Conservation and Management Measures for Bigeye Tuna', para 1.

⁵⁰ IOTC, Resolution 05/01 'On Conservation and Management Measures for Bigeye Tuna', para 2.

⁵¹ Economic losses result from bycatch and discards at sea. Bycatch of juvenile of certain species are also removed from the ecosystem. There are also ecological effects on key species which are relevant to the overall structure and functioning of the ecosystem. See J M Amande, E Chassot, P Chavance, and R Pianet, *Silky Shark (Carcharhinus falciformis) Bycatch in the French Tuna Purse Seine of the Indian Ocean* (2008); Serge M Garcia and Kevin L Cochrane, 'Ecosystem approach to Fisheries: A Review of Implementation Guidelines' (2005) 62 *ICES Journal of Marine Science* 311, 312.

⁵² FAO, *Research Implications of Adopting the Precautionary Approach to Management of Tuna Fisheries*, Fisheries Circular No. 963 (FAO, 2001) 7.

⁵³ Evgeny V Romanov, 'By-catch in the Tuna Purse Seine Fisheries of the Western Indian Ocean' (2002) 100(1) *Fishery Bulletin* 90, 90.

⁵⁴ *Ibid.*

fisheries. The relationships in these associations may be predators and prey of tunas or competitors feeding on the same prey.⁵⁵

As tuna fisheries involve various gear types, the non-target species associated with these gears also vary.⁵⁶ Most purse seine fisheries target yellowfin and skipjack tunas. The species that are associated with purse seine fisheries include whales which have some common prey with tunas, such as the flat-head, and birds which usually escape or avoid the nets.⁵⁷ Some species dependent on tuna include seabirds and sharks which prey on young yellowfin.⁵⁸ Purse seine bycatch in free swimming schools of tuna and those associated with Fish Aggregating Devices (FADs) includes dolphins; sharks; whales; whale sharks; turtles; other fish species like barracuda, rainbow runner and triggerfish; and rays.⁵⁹ The most diverse composition of bycatch in purse seine fisheries is taken from tuna schools associated with FADs. In longline fisheries for swordfish, bluefin, southern bluefin and bigeye,⁶⁰ various non-target fish such as rays, lancetfish, barracuda and black oil fish; and shark species are caught.⁶¹ There may also be interactions with seabirds such as shearwaters and albatrosses, marine turtles and marine mammals.⁶²

The conservation of non-target species is an international legal requirement for EEZ fisheries management. It is a requirement of the LOSC for coastal States to take into consideration the effects on species associated with or dependent upon harvested species⁶³ so that their viability is not threatened. It is thus an international legal requirement for Kenya to adopt conservation and management measures for species

⁵⁵ Martin A Hall, 'On Bycatches' (1996) 6 *Reviews in Fish Biology and Fisheries* 319, 328.

⁵⁶ WCPFC, *Non-target Species Interactions with the Tuna Fisheries of the Western and Central Pacific Ocean*, Sixth Regular Session of the Scientific Committee, Nuku'alofa, Tonga 10-19 August 2010.

⁵⁷ Evgeny V Romanov, 'By-catch in the Tuna Purse Seine Fisheries of the Western Indian Ocean' (2002) 100(1) *Fishery Bulletin* 90, 100.

⁵⁸ <http://www.fao.org/> (accessed 12 February 2011).

⁵⁹ Evgeny V Romanov, 'By-catch in the Tuna Purse Seine Fisheries of the Western Indian Ocean' (2002) 100(1) *Fishery Bulletin* 90, 100.

⁶⁰ Makoto Peter Miyake, Naotomi Miyabe and Hideki Nakano, *Historical Trends of Tuna Catches in the World* (FAO, 2004). FAO Fisheries Technical Paper 467.

⁶¹ Stobutzki *et al*, *Bycatch Mitigation Approaches in Australia's Western Tuna and Billfish Fishery: Seabirds, Turtles, Marine Mammals, Sharks and Non-Target Fish* (2006).

⁶² Ibid; Don Bromhead and James Findlay, *Tuna and Billfish Fishery of the Eastern Australian Fishing Zone and Adjacent High Seas*. Working Paper Presented at the Sixteenth Meeting of the Standing Committee on Tuna and Billfish, 9-16th July 2003, Mooloolaba, Australia.

⁶³ LOSC, 61(4).

belonging to the same ecosystem or associated or dependent upon tuna stocks.⁶⁴ These provisions under international law reflect ecosystem concerns and the need to take into account the incidence of bycatch and incidental catch in tuna fisheries. For this reason, fisheries habitats also need to be protected. Not only are the ecosystem concerns directed at bycatch and discards but also at the degradation of habitats. In accordance with the management measures of the IOTC, Kenya is under an obligation to adopt measures in respect of turtles,⁶⁵ seabirds,⁶⁶ and sharks.⁶⁷

6.2.2.1 Marine Turtles

In respect to turtles, Kenya is required to implement appropriate measures relating to turtles in accordance with the *FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations*.⁶⁸ Such measures include sea turtle avoidance methods through modification of fishing methods and gears in order to reduce sea turtle interactions in longline and purse seine fisheries.⁶⁹ The methods employed in longline fisheries include the use of circle hooks; using fish rather than squid for bait; and setting hooks deeper than turtle abundant depths (40-100m).⁷⁰ For purse seine fisheries, turtles need to be avoided and where they have been entangled, attempts should be made for their release. Aside from the sea turtle avoidance measures for each of the fishing gears, operators of tuna fishing vessels are required to maintain a record of incidents involving marine turtles in their logbooks. Such records include species, location of capture, conditions, action taken on board and location of release.⁷¹ Kenya is also encouraged to collaborate with the Indian Ocean- South East Asian Marine Turtle Memorandum of Understanding (IOSEA-MoU),⁷² and particularly to take into account the IOSEA MoU

⁶⁴ *UN fish Stocks Agreement*, Art. 5(e).

⁶⁵ IOTC, Resolution 09/06 ‘*On Marine Turtles*’.

⁶⁶ IOTC, Resolution 10/06, ‘*On Reducing the Incidental Bycatch of Seabirds in Longline Fisheries*’.

⁶⁷ IOTC, Resolutions 05/05, ‘*Concerning the Conservation of Sharks Caught in Association with Fisheries Managed by IOTC*’; Resolution 08/01, ‘*Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties*’.

⁶⁸ IOTC, Resolution 09/06 ‘*On Marine Turtles*’ para 1.

⁶⁹ FAO, *Guidelines to Reduce Sea Turtle Mortality in Fishing Operations* (FAO, 2009) 28.

⁷⁰ *Ibid.*

⁷¹ IOTC, Resolution 09/06, para 5, 6 and 7.

⁷² The IOSEA-MoU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia provides a framework through which States of the Indian Ocean and

including the provisions of the conservation and management plan in the implementation of bycatch mitigation measures for marine turtles.⁷³

The *Fisheries Act* has declared the maritime zones of Kenya a turtle sanctuary.⁷⁴ It states that no person shall kill any turtle; chase any turtle with intent to kill; take any turtle alive or dead, including any turtle stranded on land; or harass any turtle so as to disturb its behaviour or breeding habits.⁷⁵ The *Fisheries Act* also requires any turtle caught or taken unavoidably during fishing to be released immediately into the waters whether it is alive or dead.⁷⁶ This requirement is consistent with the IOTC requirement for bycaught turtles to be released. However, Kenya also needs to provide for the resuscitation of bycaught turtles as required by the IOTC.⁷⁷ Any person found in contravention with the regulation on marine turtles is guilty of an offense and is liable to a fine not exceeding twenty thousand shillings (US\$ 248) or to imprisonment for a term not exceeding two years or both.⁷⁸

Clearly, the fine imposed on offenders for breach of this provision is very minimal and has not been adjusted since the law was enacted. The penalty imposed for such an offence does not reflect the seriousness of the offence, and neither does it provide an effective deterrent. Further, the enforcement of fisheries legislation in Kenya is known to be poor, and punishments are very rarely carried out.⁷⁹ In most cases culprits are even released without charges.⁸⁰ Kenya needs to consider the amendment of the law and the penalties imposed for their violation in order to reflect the importance it has placed on the conservation of marine turtles.

Kenya has not implemented measures in accordance with the *FAO guidelines to Reduce Sea Turtle Mortality in Fishing Operations* in respect of tuna fisheries.

South-East Asian region, as well other States concerned to collaborate to conserve and replenish depleted marine turtle populations for which they share responsibility. See <http://www.ioseaturtles.org/introduction.php> (accessed on 14 February 2011).

⁷³ IOTC, Resolution 09/06, para 13.

⁷⁴ The *Fisheries Act 1989*, Section 51 on protection of marine mammals and turtles.

⁷⁵ The *Fisheries Act 1989*, Section 51(2).

⁷⁶ The *Fisheries Act 1989*, Section 51(3).

⁷⁷ IOTC, Resolution 09/06, para. 7.

⁷⁸ The *Fisheries Act 1989*, Section 51(4).

⁷⁹ Global Bycatch Assessment of Long-lived Species, *Country Profile: Kenya*. Project Global, Blue Ocean Institute. <http://bycatch.env.duke.edu/regions/WIO/Kenya.pdf> (accessed 14 February 2011).

⁸⁰ G M Wamukoya and Rod V Salm, *Report on the Western Indian Ocean Turtle Excluder Device (TED) Training Workshop*. IUCN Eastern African Programme (IUCN, 1998).

However, Kenya is implementing some best practice approaches to minimise threats to sea turtles through an inclusive national sea turtle conservation programme. This programme was initiated in 1993 through the Kenya Sea Turtle Conservation Committee (KESCOM).⁸¹ The conservation activities undertaken through KESCOM include research, increasing public awareness and enhancing public participation in order to minimise capture of marine turtles at sea by artisanal fishers in gill nets and their incidental capture by shrimp trawlers.⁸² As required by the IOTC, Kenya is also a signatory of the IOSEA-MoU, which is a regional initiative concluded under the auspices of the Convention on the Conservation of Migratory Species of wild Animals.⁸³ Hence, the best practice approaches that Kenya is implementing in respect of sea turtles respond to the objective of the IOSEA-MoU to protect, conserve, replenish and recover marine turtles and their habitats, based on the best scientific evidence taking into account the environmental, socio-economic and cultural characteristics.⁸⁴

Although Kenya's marine turtle conservation and mitigation efforts are not directed at tuna fisheries, they contribute to the recovery of the marine turtle population and could provide a foundation for the development of the appropriate mitigation measures for purse seine and longline fisheries. It is observed that there is a general lack of detailed information on the magnitude of sea turtle/fisheries interaction, particularly

⁸¹ FAO, South West Indian Fisheries Commission, *Workshop on Bycatch, Particularly in Prawn Fisheries, and on the Implementation an Ecosystem Approach to Fisheries Management*, Maputo, Mozambique, 15-24 November 2005. The author initiated the KESCOM programme as a fisheries officer in Kenya's Department of Fisheries jointly with other individuals from other organisations, particularly the Kenya Wildlife Services, IUCN and community groups. The author carried out surveys in respect of marine turtles along the Kenyan coast, the results of which were instrumental in the formulation of legislation, policy and strategies for the conservation of marine turtles. For example legislation has been enacted on the application of TEDs in shrimp trawlers. The results of such surveys were also used towards the author's Masters Thesis. See, G Wamukoya, F Kaloki and J Mbendo, *Sea Turtle Recovery Action Plan for Kenya*, KWS Technical Report Series No. 3 (1997); Jane Mbendo, *Integrated Environmental Assessment of the Kenyan Coast with Special Reference to Sea Turtles*, MSc. Thesis, University of Warwick, 1998.

⁸² See *Kasa News*, 12th Edition 2010. A Publication of Kenya Sea Turtle Conservation Trust. Having started as a Community Based Organisation, KESCOM has since become registered and recognised as a trust, thereby being placed in a better position to manage diverse projects both nationally and regionally. <http://www.kescom.org/Newsletter.htm>. (accessed 15 March 2011).

⁸³ IOSEA- *Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia*, Concluded on the 23 June 2001. <http://www.ioseaturtles.org/introduction.php> (accessed 14 February 2011). This Convention is administered by the United Nations Environment Programme (UNEP).

⁸⁴ IOSEA-MoU. <http://www.ioseaturtles.org/introduction.php>

in the EEZ.⁸⁵ Thus the threat to sea turtles from tuna fisheries has not been addressed at all. It is essential that Kenya identify the magnitude of sea turtle bycatch in tuna fisheries and the impact of the longline and purse seine fisheries on sea turtles as it is known that five species of sea turtles occur in Kenyan waters.⁸⁶ Information on sea turtle/fisheries interactions may be gathered through the collection of fishery data and from the fishers themselves. Such an information base is necessary for developing the appropriate mitigation measures to reduce the impacts on sea turtles in tuna fisheries.

In addition to the provisions of the *Fisheries Act*, Kenya needs to adopt mitigation measures as prescribed by the FAO Guidelines. Such mitigation measures need to provide in detail, the requirements for sea turtle bycatch mitigation for specific gears including the handling and release techniques and procedures. In respect to longlines for example, de-hooking devices and line-cutters are being employed by some States to release sea turtles.⁸⁷ Kenya could make it a requirement for such equipment to be carried on board fishing vessels and used by tuna fishing fleets. It will also be necessary for Kenya to have provisions on the various methods that can be used to avoid catching turtles in tuna fisheries. For example in longline fisheries, the use of circle hooks, and using fish as bait instead of squid.⁸⁸ Another requirement would be for data on various aspects of sea turtles to be submitted by fishers.

Kenya may develop a marine turtle mitigation plan in which actions can be identified and strategies outlined for reducing turtle mortality in tuna fisheries. Such a plan should include training of personnel and fishers alike to raise awareness on procedures and the effective use of devices employed in respect of the mitigation measures. Not only should such regulations be developed but they would also need to be publicised and enforced if the incidental capture of sea turtles is to be effective.

⁸⁵ FAO, South West Indian Fisheries Commission, *Workshop on Bycatch, Particularly in Prawn Fisheries, and on the Implementation an Ecosystem Approach to Fisheries Management*, Maputo, Mozambique, 15-24 November 2005.

⁸⁶ Jane Mbendo, *Integrated Environmental Assessment of the Kenyan Coast with Special Reference to Sea Turtles*, MSc. Thesis, University of Warwick, 1998. The species of sea turtles in Kenya's waters include Green turtle (*Chelonia midas*), Hawksbill (*Erytmochelys imbricata*), Loggerhead (*Caretta caretta*), Olive ridley (*Lepidochelys olivacea*), and Leatherback (*Dermochelys coriacea*).

⁸⁷ Stobutzki *et al*, *Bycatch Mitigation Approaches in Australia's Western Tuna and Billfish Fishery: Seabirds, Turtles, Marine Mammals, Sharks and Non-Target Fish* (2006)

⁸⁸ Gilman *et al*, 'Reducing Sea Turtle in Pelagic Longline Fisheries' (2006) 7 *Fish and Fisheries* 2, 17.

6.2.2.2 Seabirds

Aside from marine turtles, Kenya is required by the IOTC to implement the International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries (IPOA-Seabirds).⁸⁹ In this regard, Kenya is required to develop a National Plan of Action (NPOA) for Reducing Incidental Catches of Seabirds in Longline Fisheries and to employ effective mitigation measures aimed at reducing levels of seabird bycatch.⁹⁰ The IPOA-Seabirds is voluntary and has been elaborated within the framework of the FAO Code of Conduct for Responsible Fisheries. It applies to States in the waters of which longline fisheries are being conducted by their own or foreign vessels and to States that conduct longline fisheries on the high seas and in the EEZs of other States. Its objective is to reduce the incidental catch of seabirds where it occurs.⁹¹

It has been observed that the greatest threat to most seabirds is through being caught as bycatch in longline fisheries.⁹² Seabirds get hooked or entangled and drowned when they attack baited longline hooks.⁹³ Seabirds may also be attracted to vessels discarding offal which sinks close to the mainline, drawing them close to baited hooks as they attempt to dive for the offal.⁹⁴ The most threatened seabirds include species of albatross and petrels.⁹⁵ Longline fisheries are known to cause mortality in albatross and petrels worldwide.⁹⁶ These two species of seabirds are particularly vulnerable to

⁸⁹ IOTC, Recommendation 05/09, para. 1; FAO, *International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries*, hereinafter IPOA-Seabirds, Adopted at the Twenty-third Session of COFI in 1999.

⁹⁰ IOTC, Resolution 10/06, para. 1.

⁹¹ FAO, *International Plan of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries* (FAO, 1999) 2.

⁹² Henri Weimerskirch, Nigel Brothers and P Jouventin, 'Population Dynamics of Wondering Albatross *Diomedea exulans* and Amsterdam Albatross *D. amsterdamensis* in the Indian Ocean and their Relationships with Long-line Fisheries: Conservation Implications' (1997) 79 *Biological Conservation* 257, 257.

⁹³ Fast-sinking Lines Reduce Seabird Mortality in Longline Fisheries. <http://www.antarctica.gov.au/about-antarctica/> (accessed 15 February 2011).

⁹⁴ Department of Sustainability and Environment, *Incidental catch (or by-catch) of Seabirds During Longline Fishing*, <http://www.dse.vic.gov.au/> (accessed 15 February 2011); Cleo Small, *Distribution of Albatrosses and Petrels in the Southern Indian Ocean and the Overlap with IOTC Longline Fisheries*. Summary of Presentation to the First Meeting of the IOTC Bycatch Working Party, Phuket, 20 July 2005.

⁹⁵ Nigel P Brothers, John Cooper and Svein Lokkeborg, *The Incidental Catch of Seabirds by Longline Fisheries: Worldwide Review and Technical Guidelines for Mitigation*. FAO Fisheries Circular No. 937 (FAO, 1999); Cleo Small, *Distribution of Albatrosses and Petrels in the Southern Indian Ocean and the Overlap with IOTC Longline Fisheries*, Summary of Presentation to the First Meeting of the IOTC Bycatch Working Party, Phuket, 20 July 2005.

⁹⁶ Fast-sinking Lines Reduce Seabird Mortality in Longline Fisheries. <http://www.antarctica.gov.au/about-antarctica/> (accessed 15 February 2011).

increased adult mortality as they are long-lived, and have low reproductive rates.⁹⁷ It is not consistent with the principles of ecologically sustainable management for fisheries to take seabirds in large numbers.⁹⁸ Further, incidental seabird bycatch in longlining reduces gear efficiency and profitability through the loss of bait.⁹⁹ The IOTC Area includes 21% of the breeding distribution of albatrosses. Albatrosses breeding in the Southern Indian Ocean spend 70-100% of their foraging time within areas overlapping with IOTC longline fishing effort.¹⁰⁰ This makes IOTC one of the most important RFMOs for albatross distribution.¹⁰¹

At present, Kenya has not met the regional requirements for seabirds, as there are no measures in place for protecting seabirds in the tuna longline fishery. Further, there is no information on the bycatch of seabirds for Kenya.¹⁰² It is however believed that, the occurrence of albatross and petrels could be possible in Kenyan waters since these species occur in the southern Indian Ocean, and that they may be threatened by longline fishing.¹⁰³ There are several Taiwanese and Chinese longliners operating in the Kenyan EEZ.¹⁰⁴

⁹⁷ Cleo Small, *Distribution of Albatrosses and Petrels in the Southern Indian Ocean and the Overlap with IOTC Longline Fisheries*, Summary of Presentation to the First Meeting of the IOTC Bycatch Working Party, Phuket, 20 July 2005.

⁹⁸ Svein Lokkeborg and Graham Robertson, 'Seabird and Longline Interactions: Effects of a Bird-Scaring Streamer Line and Line Shooter on the Incidental Capture of Northern Fulmars *Fulmarus glacialis*' (2002) 106(3) *Biological Conservation* 359, 359.

⁹⁹ Svein Lokkeborg, *Review and Assessment of Mitigation Measures to Reduce Incidental Catch of Seabirds in Longline, Trawl and Gillnet Fisheries*. FAO Fisheries and Aquaculture Circular No. 1040 (FAO, 2008) 1.

¹⁰⁰ Birdlife International, *An Analysis of Albatross and Petrel Distribution and Overlap with Longline Fishing Effort within the IOTC Area: Results from the Global Procellariiform Tracking Database*. A Paper submitted on behalf of the Agreement for the Conservation of Albatrosses and Petrels (ACAP) prepared for the Third Session of the IOTC Working Party on Ecosystems and Bycatch, Victoria, Seychelles 11-13 July 2007.

¹⁰¹ Cleo Small, *Distribution of Albatrosses and Petrels in the Southern Indian Ocean and the Overlap with IOTC Longline Fisheries*, Summary of Presentation to the First Meeting of the IOTC Bycatch Working Party, Phuket, 20 July 2005.

¹⁰² Global Bycatch Assessment of Long-lived Species, *Country Profile: Kenya*. Project Global, Blue Ocean Institute. <http://bycatch.env.duke.edu/regions/WIO/Kenya.pdf> (accessed 14 February 2011).

¹⁰³ Ibid. The endangered Indian yellow-nosed albatross (*Thalassarche carteri*) is endemic to the IOTC area and may interact with longlines in Kenyan waters. See also Orea Anderson, Ross Wanless and Cleo Small, *Seabird Bycatch Rates in IOTC Longline Fisheries*. Birdlife International Global Seabird Programme, A Paper prepared for the 12th Session of the IOTC Scientific Committee 30th November- 4th December 2009, Victoria, Seychelles.

¹⁰⁴ Jan Hoorweg, Barasa Wangila and Allan Degen, *Artisanal Fishers on the Kenyan Coast: Household Livelihoods and Marine Resource Management* (Koninklijke Brill, 2009) 18.

The IPOA-Seabirds enumerates the activities that Kenya is required to undertake in implementing it. First, Kenya is required to carry out an assessment of the longline fishery in order to determine the existence, extent and nature of incidental catch of seabirds.¹⁰⁵ Such an assessment may include, *inter alia*, the analysis of data concerning fishing fleets (numbers of vessels by size) and fishing techniques (demersal, pelagic, methods); fishing areas; fishing effort; status of birds in the area; total annual catch of seabirds; and incidental catch of seabirds monitoring.¹⁰⁶ The assessment may also provide a statement of conclusions and decisions that would assist in developing and implementing the NPOA-Seabirds.¹⁰⁷

Secondly, a National Plan of Action for Reducing the Incidental Catch of Seabirds (NPOA-Seabirds) should be adopted based on the findings of the assessment.¹⁰⁸ The NPOA may contain the following elements; the NPOA should prescribe appropriate mitigation methods.¹⁰⁹ Such methods should reflect the specific needs of Kenya's longline fishery. It may be necessary to combine a number of mitigation measures in order to make them more effective in meeting the ecological needs as well as the needs of the fishing industry. The fishing industry for example, needs to minimise the time spent sorting and damage to their gears. Kenya may adopt mitigation measures that have been developed to reduce the incidental capture of seabirds that are already in use. These include increasing the sink weight of bait, bird scaring lines, and reducing visibility of bait (e.g. night setting).¹¹⁰ The NPOA should also include plans for research and development aimed at developing the appropriate devices for seabird deterrence; continuous improvement of technology; and monitoring and evaluation of the measures.¹¹¹ In addition the NPOA should include an education and awareness programme for various individuals and groups including fishers, managers and conservationists.¹¹² Finally, it will be necessary to incorporate a data

¹⁰⁵ IPOA-Seabirds, Introduction, para 12.

¹⁰⁶ IPOA-Seabirds, Section I, para 2.

¹⁰⁷ IPOA-Seabirds, Section I, para 2.

¹⁰⁸ IPOA-Seabirds, Introduction, para 12.

¹⁰⁹ IPOA-Seabirds, Section II, para 1.

¹¹⁰ IPOA-Seabirds.

¹¹¹ IPOA-Seabirds, Section II, para 2.

¹¹² IPOA-Seabirds, Section II, para 3.

collection element to collect data on seabird incidental catches and for determining the performance of the mitigation measures.¹¹³

It will be necessary for Kenya's legislation to provide for the protection of seabirds, and for Kenya to make it an obligation for tuna vessels fishing in its EEZ to observe the requirements of the NPOA by amending the *Fisheries Act* accordingly. Under the *Environment Protection and Biodiversity Act 1999* of Australia, for example, the incidental catch of seabirds during oceanic longline fishing operations has been listed as a key threatening process, and a *Threat Abatement Plan for the Incidental Catch (bycatch) of Seabirds* has been established to manage the threat.¹¹⁴ The *Threat Abatement Plan* is fulfilling the role of NPOA-Seabirds,¹¹⁵ and aims to significantly reduce the seabird bycatch to sustainable levels,¹¹⁶ and ultimately achieve a zero catch of seabirds.¹¹⁷

6.2.2.3 Sharks

Another requirement for non-target species concerns sharks. According to the IOTC, Kenya is required to minimise the waste in respect of sharks by requiring fishers to fully utilise their entire catches of sharks.¹¹⁸ Fishing vessels are thus prohibited from retaining on board, transshipping or landing any fins harvested in contravention to this resolution.¹¹⁹ In addition, Kenya is under an obligation to impose requirements for the release of live sharks, especially juveniles and pregnant sharks caught incidentally in fisheries not directed at sharks.¹²⁰ Another requirement is for Kenya to implement the

¹¹³ IPOA-Seabirds, Section II, para 4.

¹¹⁴ Barry G. Baker and Luke A. Finley, *2008 National Assessment Report for Reducing the Incidental Catch of Seabirds in Longline Fisheries*. A Consultancy report for the Government of Australia March 2010.

¹¹⁵ Ibid.

¹¹⁶ Australian Antarctic Division, Department of the Environment and Water Resources, *Background to the Threat Abatement Plan for the Incidental Catch of Seabirds During Oceanic Longline Fishing Operations: A Key Threatening Process Listed Under the EPBC Act*. 2005. <http://www.aad.gov.au/> (accessed 5 February 2010).

¹¹⁷ Threat Abatement Plan 2006, <http://www.aad.gov.au/> (accessed 5 February 2010).

¹¹⁸ IOTC, Resolution 05/05, para. 3.

¹¹⁹ IOTC, Resolution 05/05 para 6.

¹²⁰ IOTC, Resolution 05/05, para. 7.

FAO International Plan of Action for the Conservation of Sharks (IPOA-Sharks).¹²¹ The IPOA-Sharks applies to States in the waters of which sharks are caught by their own or foreign vessels and to States the vessels of which catch sharks on the high seas.¹²²

Sharks bycatch has been observed in purse seine sets,¹²³ and also in longlines.¹²⁴ Shark populations are particularly vulnerable to fishing pressure due to their slow growth rate, late maturity, and low fecundity.¹²⁵ Based on these characteristics and the increase in shark exploitation both as bycatch and targeted fisheries, the viability of sharks has become a worldwide concern.¹²⁶ Hence, the adoption of the IPOA-Sharks in 1999.¹²⁷ The objective of the IPOA-Sharks is to ensure the conservation and management of sharks and their long-term sustainable use.¹²⁸ States should thus implement the IPOA by adopting a National Plan of Action for conservation and management of shark stocks.

At present, Kenya has no provisions concerning sharks. There is a need for Kenya to adopt NPOA-Sharks in order to meet the requirements of the IOTC regarding sharks. In meeting the objective of the IPOA-Sharks, Kenya should aim to ensure, *inter alia*, the sustainability of catches; assess threats to critical habitats and establish appropriate management actions; contribute to the protection of management of biodiversity and ecosystem structure and function; improved data and monitoring of

¹²¹ IOTC, Resolution 05/05. FAO, *International Plan of Action for the Conservation of Sharks*, hereinafter IPOA-Sharks, Adopted by the Twenty-third Session of COFI in 1999. The IPOA-Sharks has been elaborated within the framework of the FAO Code of Conduct as envisaged by Article 2d.

¹²² FAO, *Fisheries Management: Conservation and Management of Sharks* (FAO, 2000) 24.

¹²³ Michael D Scott, *IATTC Research on Reducing Shark Bycatch in the Tuna Purse-Seine Fishery in the Eastern Tropical Pacific Ocean*. WCPFC Scientific Committee, Third Regular Session 13-24 August 2007 Honolulu, United States of America.

¹²⁴ Lawrence R Beerkircher, Enric Cortes and Mahmood Shivji, 'Characteristics of Shark Bycatch Observed on Pelagic Longlines off the Southeastern United States 1992-2000' (2002) 64(4) *Marine Fisheries Review* 40, 41.

¹²⁵ Mary Lack and Glenn Sant, *Trends in Global Shark Catch and Recent Developments in Management* (TRAFFIC, 2009)1; J R King and G A MacFarlane, 'Marine Fish Life History Strategies: Applications to Fisheries Management' (2003) 10(4) *Fisheries Management and Ecology* 249, 252; Musick *et al*, 'Management of Sharks and their Relatives (Elasmobranchii)' (2000) 25(3) *Fisheries* 9, 9.

¹²⁶ Michael D Scott, *IATTC Research on Reducing Shark Bycatch in the Tuna Purse-Seine Fishery in the Eastern Tropical Pacific Ocean*. WCPFC Scientific Committee, Third Regular Session 13-24 August 2007 Honolulu, United States of America.

¹²⁷ See J I Castro, C M Woodley and R L Brudek, *A Preliminary Evaluation of the Status of Shark Species*. FAO Fisheries Technical Paper 380 (FAO, 1999).

¹²⁸ IPOA-Sharks, para 16.

sharks; and capacity building.¹²⁹ Kenya is also required to carry out an assessment on the effort and yield (physical and economic); status of stocks; existing management measures and their effectiveness as well as possible modifications. A report on the findings of such an assessment will need to be written.¹³⁰ The Shark-Plan for Kenya should include; the status of the stocks, associated fisheries and management framework and its enforcement; the objective of the plan; and strategies for achieving such an objective. Kenya should report on the development, implementation and assessment of its Shark-plan biennially.¹³¹

For Kenya to implement the NPOA-Sharks effectively there is a need to develop an appropriate institutional, legal and policy framework. Hence, Kenya needs to develop programmes for education, awareness and capacity building of all stakeholders and to determine their mandates. Kenya will also need to establish regulatory provisions concerning the conservation of sharks. Considering the transboundary nature of some sharks, Kenya will need to cooperate with other States in the region through the IOTC and other arrangements concerning issues such as conservation, data exchange, fund raising and research.

The *Fisheries Act* requires the Director to include as a condition of the foreign fishing license, the amount of bycatch that may be retained.¹³² Kenya could strengthen these measures towards minimising the incidental catch of non-target species by imposing additional conditions on licenses for fishing vessels requiring them to submit reports on incidental catches of turtles, sharks, seabirds, and other non-target species. Such data would support the assessment of the status of bycatch in its tuna fisheries. It would also facilitate the development of protective measures under the framework of the IPOAs, in order to ensure the conservation of vulnerable or threatened species and to minimise the impacts of tuna fisheries on the wider ecosystem, thereby fostering the integrity of Kenya's marine ecosystems and enhancing their productivity. To conform to good practice, the provisions established for these purposes would need to be species specific, and clearly state Kenya's ecosystem objectives.

¹²⁹ IPOA-Sharks.

¹³⁰ IPOA-Sharks.

¹³¹ IPOA-Sharks.

¹³² The *Foreign Fishing Craft Regulations*, Section 10(d).

It would be beneficial for Kenya to formulate a national fisheries bycatch policy which would provide the necessary framework to minimise the impact of fishing on non-target species and reduce discards. Such a policy could provide the necessary strategies for Kenya to address bycatch associated issues such as principles and approaches to minimising bycatch; guidelines for developing management plans (including bycatch action plans); designing education and awareness programmes; and cooperation of various stakeholders. Australia for example, has developed a bycatch policy which provides a national framework for coordinating efforts to reduce bycatch, and a benchmark against which the efforts to reduce bycatch can be measured.¹³³

The ecosystem effects from the incidental mortality of non-target species in tuna fisheries are a threat to many species. The effective management and reduction of discards in capture fisheries are still a matter of global concern. FAO recognises that managing bycatch is an integral component of implementing the ecosystem approach to fisheries.¹³⁴ For this reason, the United Nations General Assembly Sustainable Fisheries Resolution has called for action on bycatch and discards.¹³⁵ Further, the FAO has initiated global studies on bycatches and discards on the global scale for tuna purse seine, longline and small scale fisheries. The development of the International Guidelines on Bycatch Management and Reduction of Discards by FAO is also underway.¹³⁶ Such guidelines will be instrumental in advising States on issues pertaining to *inter alia*, bycatch management plans, and governance and institutional frameworks.

6.3 Data Collection and Sharing

Another requirement for the conservation and management of tuna fisheries is the collection and sharing of data. International fisheries instruments require flag and coastal States to contribute and exchange scientific information, catch and fishing effort

¹³³ Department of Agriculture, Fisheries and Forestry-Australia, Fisheries and Aquaculture Branch, *National Policy on Fisheries Bycatch* 1999.

¹³⁴ FAO, *Report of the Twenty-Eighth Session of the Committee on Fisheries*, para 72. Rome 2-6 March 2009. FAO Fisheries and Aquaculture Report R902.

¹³⁵ UNGA, A/RES/64/72.

¹³⁶ FAO, *Report of the Twenty-Eighth Session of the Committee on Fisheries*, Rome 2-6 March 2009. FAO Fisheries and Aquaculture Report R902. The Technical Consultation to Develop International Guidelines on Bycatch Management and Reduction of Discards is scheduled to take place in Rome from December 6-10, 2010.

statistics, and other data relevant to the conservation of fish stocks.¹³⁷ There is a further need to ensure that such data is accurate, detailed and that it is collected and shared in a timely manner.¹³⁸ These data may include catch and effort data,¹³⁹ data on target and non-target species¹⁴⁰ biological data,¹⁴¹ and vessel identification and gear related data.¹⁴²

It is evident that various kinds of data are required at every stage of decision making for tuna resources conservation and management. The need to collect and share data on tuna stocks is clear. Data are needed to make rational decisions, evaluate fisheries performance in relation to management objectives and fulfil regional requirements.¹⁴³ Because of their migratory nature, there are several States in the region participating in the harvest of tuna stocks. Thus for effective conservation and management of tuna stocks, there is a need to consider data from various tuna fisheries. Not only are shared data essential to a transparent decision-making process, but an educated public can also “serve to marshal the political will needed to resist historical patterns of overexploitation”.¹⁴⁴

The IOTC requires various kinds of data for target and non-target species, to be submitted by Kenya according to specific timelines,¹⁴⁵ and that such data is shared with other coastal states and flag states fishing for the same stocks. An analysis of management practices and regulations regarding data in Kenya’s tuna fisheries follows.

¹³⁷ LOSC, Arts. 61(5); 119(2); *UN Fish Stocks Agreement*, Art. 14(1)(a).

¹³⁸ *UN Fish Stocks Agreement*, Art. 14(1)(b); Annex I, Art. 3(1).

¹³⁹ *UN Fish Stocks Agreement* Annex I, Art. 3(1)(a).

¹⁴⁰ *UN Fish Stocks Agreement* Annex I, Art. 3(1)(b).

¹⁴¹ *UN Fish Stocks Agreement* Annex I, Art. 3(2)(b).

¹⁴² *UN Fish Stocks Agreement* Annex I, Art. 4(1)(a, b, c, d).

¹⁴³ FAO, *Guidelines for the Routine Collection of Capture Fishery Data*. FAO Fisheries Technical Paper 382 (FAO, 1998) 3.

¹⁴⁴ J T Schnute and L J Richards, ‘Stock Assessment for the 21st Century’ in Laura J Richards and Jean-Jacques Maguire, ‘Recent International Agreements and the Precautionary Approach: New Directions for Fisheries Management Science’ (1998) 55 *Canadian Journal of Fisheries and Aquatic Science* 1545, 1549.

¹⁴⁵ IOTC, Resolution 10/02, para. 6, *Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties*. a) longline fleets operating in the high seas are to provide provisional data for the previous year not later than 30 June with final data submitted no later than 30 December; b) all other fleets are to submit final data for the previous year no later than 30 June.

6.3.1 Data on Target Species

According to the IOTC, the essential tuna data to be collected and submitted by Kenya, fall into three main categories. The first category is the nominal catch data, comprising the total catch by species and gear for all species under the IOTC mandate.¹⁴⁶ Secondly, catch and effort data for surface fisheries, longline fisheries and coastal fisheries is to be collected.¹⁴⁷ For surface fisheries, catch weight by species and fishing effort are to be provided, and purse seine data stratified by mode.¹⁴⁸ For longline fisheries the number of hooks deployed should be provided in addition.¹⁴⁹ Thirdly, size data should be provided for all gears and for all species covered by the IOTC mandate, according to the guidelines set out by the scientific committee.¹⁵⁰ The IOTC provides a logbook template for maintaining a data recording system for purse seine and long line fishing vessels.¹⁵¹ The IOTC has adopted elaborate measures specifying the format and timeframe for submission of tuna fisheries data and requires that a standardised logbook with relevant data be submitted to the flag State and coastal State administration for onward transmission to the IOTC Secretariat and the Scientific Committee by June 30th of the following year on an aggregated basis for purse seine and longline fishing vessels.¹⁵² Longline data is to be submitted to the IOTC on 30 December each year.¹⁵³

In Kenya, one of the conditions that the Director may impose on a fishing license is the provision of statistical information.¹⁵⁴ This is true for both national and foreign fishing vessels.¹⁵⁵ Currently, all tuna data is based on vessels' logbook

¹⁴⁶ IOTC, Resolution 10/02, para. 2, *Mandatory Statistical Requirements for IOTC Members and Cooperating non-Contracting Parties (CPCs)*. These data are highly aggregated statistics for each species. It is estimated per fleet, gear and year for a given area. See IOTC, *Report on the IOTC Fisheries Statistics record: IOTC-2008CoC06*.

¹⁴⁷ IOTC, Resolution 10/02 para 3.

¹⁴⁸ IOTC, Resolution 10/02 para 3(a). The purse seine data is stratified according to whether they are free swimming schools or FAD associated catches.

¹⁴⁹ IOTC, Resolution 10/02 para 3(b).

¹⁵⁰ IOTC, Resolution 10/02 para 4.

¹⁵¹ IOTC, Resolution 10/03, '*Concerning the Recording of Catch by Fishing Vessels in the IOTC Area*', para1 and Annex I; IOTC, Resolution 08/04, '*Concerning the Recording of Catch by Longline Fishing Vessels in the IOTC Area*', para. 1 and 2, And Annex I and II.

¹⁵² IOTC, Resolution 10/03, para. 2, *Concerning the Recording of Catch by Fishing Vessels in the IOTC Area*; IOTC, Resolution 08/04, para. 1 and 2, *Concerning the Recording of Catch by Longline Fishing Vessels in the IOTC Area*.

¹⁵³ IOTC, Resolution 10/03, para 6.

¹⁵⁴ Fisheries (Foreign Fishing Craft) Regulations, Sections 10(i).

¹⁵⁵ Fisheries Act 1989, Section 8(1); Fisheries General Regulations, Section 9(1)(a).

records.¹⁵⁶ Thus, every master of a licensed foreign fishing vessel operating in Kenya fishery waters has to maintain on board the vessel at all times, a fishing log which should include the following information relating to the activities of the vessels; methods of fishing used; fishing effort of the vessel in terms of number of hauls of trawls or seine nets and in the case of the set nets or long lines, the length of netting or number of hooks set per day; area in which fishing was undertaken; specifics of fish taken including the quantity and size of fish of each species measured by weight; and species of fish returned from the vessel into the sea and the quantity.¹⁵⁷ Other requirements include reporting on a weekly basis, to the Director or to the person designated on the license, the quantity, in kilogrammes, of each species of fish in the hold; and each species of fish caught since the last port of inspection.¹⁵⁸

6.3.2 Data on Non-Target Species

Aside from data directly related to target fish stocks, it is a requirement of international fisheries instruments to collect and share data on non-target and associated or dependent species.¹⁵⁹ The IOTC obligates Kenya to submit data on numbers of animals caught for turtles.¹⁶⁰ Kenya is further required to report catch and effort data for sharks and submit such data in accordance with the IOTC data reporting procedures.¹⁶¹ This also includes historical data. Kenya is also obligated to encourage CPCs operating in its EEZ to collect and voluntarily provide the scientific committee of with data on incidental catches of seabirds in fisheries under the purview of the IOTC.¹⁶²

Currently, Kenya's fisheries laws do not explicitly provide for the collection of data on turtles, sharks, seabirds or any other non-target species. However, the Fisheries Act authorises the Director to impose a requirement for the provision of statistical information on a fishing license.¹⁶³ Kenya could therefore require the collection and submission of data for non-target species, particularly those specified by the IOTC.

¹⁵⁶ Stephen Ndegwa and Dorcas Sigana, *National Report of Kenya 2010*.

¹⁵⁷ Fisheries (Foreign Fishing Craft) Regulations, Section 31(2).

¹⁵⁸ Fisheries (Foreign Fishing Craft) Regulations, Section 32(d) and (e).

¹⁵⁹ *UN Fish Stocks Agreement*, Annex I, Art. 1(1).

¹⁶⁰ IOTC, Resolution 09/06, para 2; Recommendation 05/09, para 2.

¹⁶¹ IOTC, Resolutions 05/05, para 1 and 10/02, para 3.

¹⁶² Recommendation 05/09, para 2.

¹⁶³ Fisheries (Foreign Fishing Craft) Regulations, Sections 10(i).

6.3.3 Data on Vessel Characteristics

Another data requirement relates to vessel characteristics. A list of vessels larger than 24 meters in length and operating the IOTC area is to be submitted to the IOTC with the following information; IOTC number; name and registration number; IMO number if available; vessel type, length and gross tonnage; main target of species; and period of authorisation.¹⁶⁴ Kenya is under an obligation to ensure the vessels operating in its EEZ are listed on the IOTC Record of Active Vessels.

6.3.4 Management Practices for Data Collection in Kenya

The collection and management of tuna data is central to the management of Kenya's tuna fisheries. Well managed tuna data aids the decision making process which is fundamental to ensuring the long-term sustainability of tuna resources. The process of data management involves managing, checking, correcting, securing and storing tuna fisheries data after they are collected.¹⁶⁵ A database system usually facilitates the management of such data.¹⁶⁶ Data management of a tuna fishery may include registration of data (logsheets, port samplers or observers); manual checks of data forms; entering data into a database; archiving; and packaging data for onward transmission to relevant organisation.¹⁶⁷ Well managed data ensures its quality, efficient storage, completeness, and security.¹⁶⁸ Thus, data collection systems need to be supported with good data management.

As earlier discussed, Kenya's tuna data is obtained from logbook recoveries. These data are submitted to the Ministry of Fisheries Development where they are processed and analysed. Kenya is also implementing a port sampling programme in respect of purse seine vessels.¹⁶⁹ Port sampling is a convenient and cost-effective method for obtaining quantities of species and size composition data (lengths of

¹⁶⁴ IOTC, Resolution 10/08, *Concerning a Record of Active Vessels Fishing for Tuna and Swordfish in the IOTC Area*, para1 and 2.

¹⁶⁵ Secretariat of the Pacific Community (SPC), *Increased Demands for Tuna Fisheries Data Management in Pacific Island Member Countries*. 6th SPC Heads of Fisheries Meeting 9-13 February 2009, Noumea, Caledonia. Working Paper 8.

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.

¹⁶⁸ Ibid.

¹⁶⁹ Stephen Ndegwa and Dorcas Sigana, *National Report of Kenya 2010*.

individual fish) for stock assessment and also for the determination of annual catch estimates.¹⁷⁰ Port sampling data can also provide independent verification of fisheries data supplied in logsheets.¹⁷¹ Kenya's port sampling programme has however been hampered by the low numbers of purse seine coming to port and lack of personnel.¹⁷²

The logbook returns from foreign fishing fleets in Kenya are however very poor, as these vessels hardly report their catches to national authorities.¹⁷³ It has been observed by some non-governmental organisations that the reluctance of foreign fishing vessels to divulge their catches is compounding the challenges of fishery data collection and recording.¹⁷⁴ It is quite possible that logbook data are also unverified. According to fisheries reports, inspection and verification of logsheets has only been carried out for the Kenyan flagged longliner.¹⁷⁵

As the foreign fleets land and process the majority of the tuna catches taken from Kenya's EEZ in foreign ports,¹⁷⁶ the data for such catches is not reflected in the logbooks. The catch landed in foreign ports is not likely to be reported to the IOTC as having originated from Kenya. If Spain for example, lands the catch obtained from the Kenyan EEZ in the EU, it shall not be reported to the IOTC as Kenyan catch. The implication is that, the logbook data does not provide a true picture of the actual amounts of tuna caught in Kenya's EEZ. This is further compounded by the activities of illegal fishing vessels.¹⁷⁷ These uncertainties in tuna data are reflected by the nominal catch reports submitted to the IOTC as seen in Figure 6.

¹⁷⁰ WCPFC, *Report of the First Vietnam Tuna Fishery Tuna Fishery Data Collection Workshop* 15-17 March 2010, Hai, Phong, Vietnam.

¹⁷¹ Ibid.

¹⁷² Stephen Ndegwa, *National Report of Kenya on Tuna Fishery* 2007. The piracy situation in Somalia has had an impact on the numbers of vessels landing their fish in the Kenyan port of Mombasa which have reduced drastically. In respect of personnel, the Department of Fisheries has not recruited new staff for at least 10 years.

¹⁷³ George Habib, *National Report on Fisheries Potential in Kenya's EEZ* 2003. London: Commonwealth Secretariat

¹⁷⁴ Fishing Forum to Address Decline in Tuna Harvest <http://www.standardmedia.co.ke/business/> (accessed 17 February 2010).

¹⁷⁵ Stephen Ndegwa, *National Report on Tuna Fishery* 2007.

¹⁷⁶ Nancy Gitonga and Robin Achoki, 'Fiscal Reforms for Kenya Fisheries' in Stephen Cunningham and Tim Bostock (eds), *Papers Presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management*, Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

¹⁷⁷ Evanson Chege, Andrew Wamukota and Nyawira Muthiga, 'Promotion and Management of Marine Fisheries in Kenya' in Gerd Winter (ed), *Towards Sustainable Fisheries Law: A Comparative Analysis* (IUCN, 2009) 120.

From Figure 6, it can be observed that yellowfin dominate the tuna catches in Kenya and have been reported consistently since 1980 to 2009. However, there are no catch reports for bigeye and skipjack since 1984-2004. The average catch for yellowfin is 80tonnes, with the highest peak at 370tonnes in 1983. From 1993-2006 the catch reports for yellowfin have remained at 80tonnes.

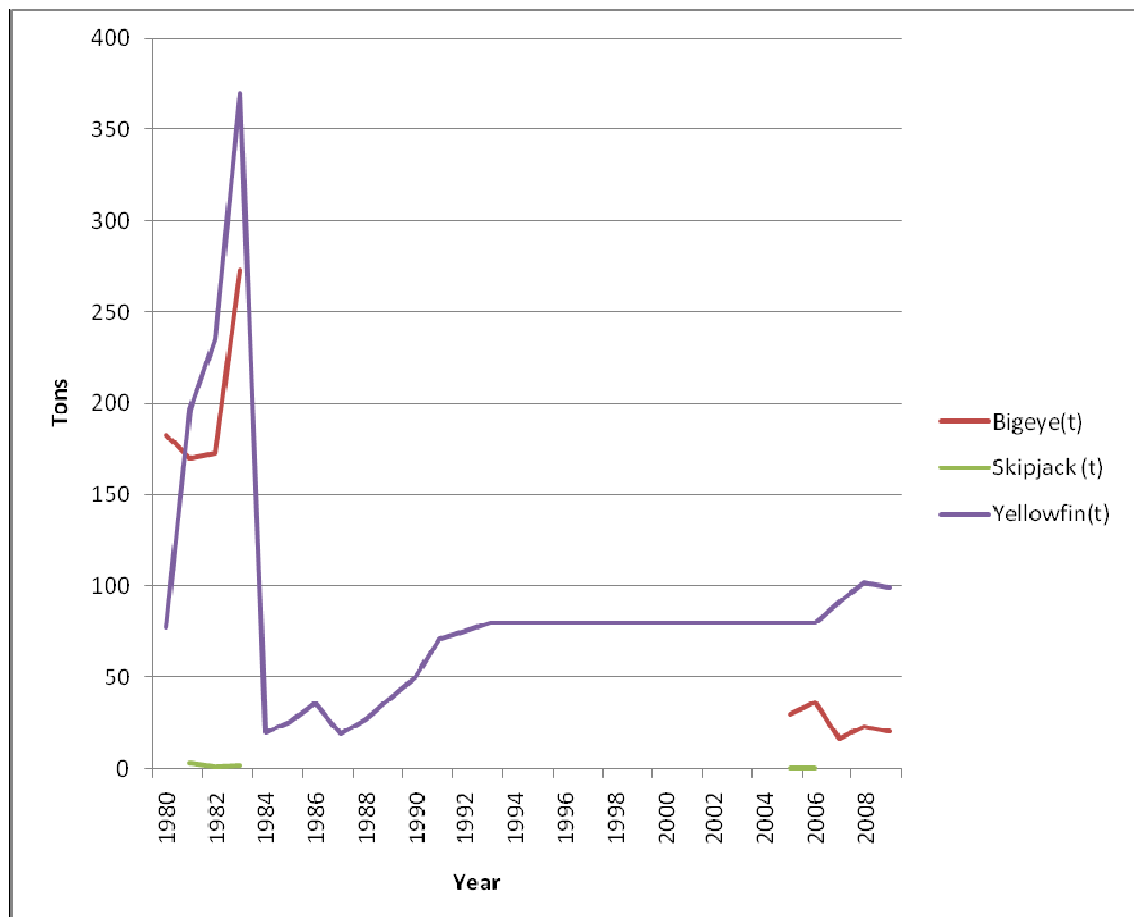


Figure 6. Nominal Tuna Catches for Kenya¹⁷⁸

A catch return of 80 tonnes for a fishing vessel operating annually does not appear realistic considering the operating costs of such a vessel. Generally, the cost factors for most fisheries include labour (30-50% of total costs); fuel (10-25%); fishing gear (5-15%); repair and maintenance (5-10%); and capital cost, such as depreciation and interest (5-25%).¹⁷⁹ Although there is no representative global data set on the costs of fishing, the costs of each of the above factors of production have become very high

¹⁷⁸ Source: IOTC <http://www.iotc.org/> (accessed 17 February 2010).

¹⁷⁹ The World Bank, *The Sunken Billions: The Economic Justification for Fisheries Reform* (2009) 12.

with deteriorating global level productivity, forcing majority of producers to incur higher fishing costs while the global catch has remained stagnant.¹⁸⁰ The average length of high seas tuna vessels which mainly target yellowfin and skipjack tunas is 70-80 meters and these vessels carry about 1,000 to 1,500 tonnes of frozen tuna.¹⁸¹ It is therefore not realistic for such a vessel to operate profitably with an annual catch of only 80 tonnes. There may be two reasons for this kind of data reports. One is that the DWFNs may be misreporting data. The second reason is that there are deficiencies in Kenya's statistical system. Both these issues have been previously pointed out as being instrumental in the constraints for data collection in Kenya.

In order to improve data reporting from DWFNs, the government is contemplating imposing a requirement for foreign vessels fishing in Kenya's EEZ to land their catches at Kenyan ports, and to pay royalties for such catches.¹⁸² Such a requirement will have to be preceded by infrastructure enhancement, particularly in the port area, to develop facilities for handling fishing vessels as will be discussed in chapter 7. Many developing States in the Western Indian Ocean lack robust data collection and data management systems.¹⁸³ They also lack personnel with expertise and financial resources to establish such systems, thereby jeopardising the quality of fisheries data.¹⁸⁴ The quality of such data is expected to allow for statistically meaningful analysis in order to achieve conservation and management objectives of the tuna fishery.¹⁸⁵ It is therefore critical for Kenya to implement a reliable data management system for tuna that can aid in decision making.

¹⁸⁰ Ibid.

¹⁸¹ James Joseph, *Managing Tuna Fishing Capacity of the world Tuna Fleet*, FAO Fisheries Circular No. 982 (2003) 23.

¹⁸² International Collective in Support of Fishworkers, *New Kenyan Law Targets Foreign vessels*. <http://www.icsf.net/> (accessed 17 February 2010).

¹⁸³ South West Indian Fisheries Project (SWIOFP), *Regional Data Gap Analysis for Component 4 (Pelagic Fisheries) for SWIOFP* (2009).

¹⁸⁴ FAO, *Report of the Second Working Party on Fisheries Data and Statistics*, Mombasa, Kenya, 28-30 April 2008. FAO Fisheries Report No. 886.

¹⁸⁵ *UN Fish Stocks Agreement*, Annex 1(1).

6.3.5 Deficiencies in Kenya's Tuna Fishery Data and Gaps in the Fisheries Regulations

As previously discussed, the IOTC obligates Kenya to submit specific types of tuna fishery data to the secretariat within a designated period and in the required format. Kenya has a number of data deficiencies in relation to incompleteness, lateness in provision to the IOTC, and poor quality.

According to the IOTC, the catch data submitted by Kenya was found to be of poor quality. The data from Kenya does not meet the IOTC requirements in terms of both quality and detail, as they lack essential fishery information. The data are also not submitted in a timely manner as required by the IOTC. On many occasions, Kenya has been late in submitting data reports. At other times these data have not been submitted at all completely,¹⁸⁶ thus creating gaps in the IOTC fisheries data and affecting the quality of stock assessments. Late reports compromise the validation, verification and utility of data, particularly when such data are submitted close to or during Working Party meetings.¹⁸⁷ Poor and late reporting of data by DWFNs probably contributes to the delays and poor quality of data in Kenya. Even so, Kenya's statistical system was among those that were unable to produce reliable estimates of catches from 1950 to date. A recommendation of the IOTC is for Kenya to implement new data collection systems or strengthen the existing ones.¹⁸⁸

These deficiencies need to be addressed if Kenya is to fulfil its reporting requirements in accordance with the IOTC. There is a need for Kenya to develop an efficient data system that would aid in improving the accuracy of tuna fisheries data, to enable national and regional stock assessments. It will be necessary for Kenya to develop and implement an effective logbook system and the means to validate catch data. In order for Kenya to meet the data requirements of the IOTC, priority also needs to be given to long-term capacity building needs for data collection. Capacity will be needed in areas such as; data collection methods; international data requirements; managing the database system; reporting; and data security.¹⁸⁹

¹⁸⁶ IOTC, *Report of the Twelfth Session*, Muscat, Oman 7-11 June 2008. For example, in 2006 Kenya's catch report on nominal catch was submitted late, while reports on catch and effort, and size frequency failed to be submitted completely.

¹⁸⁷ IOTC, *Report on IOTC Data Collection and Statistics* 2007.

¹⁸⁸ IOTC, *Report of the Twelfth Session*, Muscat, Oman 7-11 June 2008.

¹⁸⁹ Tuna Data Management Strengthened in Solomon Islands <http://www.worldfishingtoday.com/> (accessed 18 February 2011).

There are various opportunities that arise as a result of Kenya's cooperation through the IOTC for the conservation and sustainable utilisation of tuna resources. By cooperating through the IOTC, Kenya can access data on tuna fisheries resources in the region, receive management advice and training, and participate in decision making on issues concerning conservation and management of tuna resources. Such cooperation improves Kenya's capabilities to utilise its tuna resources more sustainably and enables Kenya to be represented in the IOTC.

In respect to its obligations, Kenya has not fully given effect to the international and regional requirements for data collecting and sharing in its fisheries laws and regulations. There are a number of weaknesses that inhibit the effectiveness of the measures it has adopted in this respect. One major weakness relates to the provision for timely and accurate reporting of the catch. The Fisheries Act fails to provide for the timely and accurate reporting of the catch as required by international fisheries instruments and the IOTC. Accurate and timely reporting of catch are critical to monitoring of the fish catch. Such a provision could be imposed as a condition of the fishing vessels license. There is a need for the Fisheries Act to be more stringent in this regard especially because, despite the conditions imposed on the fishing vessel license by the Fisheries Act requiring submission of catch data, Kenya is among the State Parties that fail to fully fulfil the data reporting obligations on timeliness imposed by the IOTC. An additional gap in Kenya's data regulations for non-target species is that, the Fisheries Act does not specifically address data reporting requirements for seabirds and sharks as required by the IOTC.

To comply with international and regional data reporting requirements, Kenya's fisheries regulations on data reporting need to be more explicit. The obligations relating to timeliness, accuracy and quality of data will need to be more precise. The same data requirement applies to specific species, and especially non-target species for which Kenya is obligated under the IOTC to provide catch reporting measures. The fisheries regulations for example, may require the reporting of catch data with respect to specific species. It will also be necessary for the fisheries regulations to specify timeframes for the provision of such data. These timeframes need to be synchronised with the IOTC timeframe for submission of data in order to ensure that Kenya submits its tuna fisheries data in a timely manner. Foreign fishing vessels could be required to report accurate tuna fisheries data promptly, a few months before the due date for the IOTC data. The

late provision of such catch returns could be prescribed as an infringement offense. Kenya could impose legal sanctions or financial penalties to deter such delays.

Fisheries data underpins and sustains the management framework of Kenya's tuna fisheries. The maintenance of data quality, timeliness and completeness of data reporting is therefore fundamental to the effective conservation and management of Kenya's tuna fisheries. Kenya should make it a priority to obtain the right data in order to assess the tuna fisheries resources available as a first step towards the conservation and management of its tuna resources. Without proper knowledge of its tuna stocks it is extremely difficult for Kenya to determine quantities of fish to be harvested and hence the numbers of fishing vessels to licence. For any country to sell fishing rights to a DWFN they have to base their decisions on sufficient knowledge of fish stocks and their sustainability.¹⁹⁰

6.4 Compliance and Enforcement

The effectiveness of the conservation and management measures adopted by Kenya in respect of its tuna resources depends on compliance by fishing vessels. The enforcement of such measures is also vital for Kenya to meet its management objectives. To ensure that flag States take responsibility of vessels flying their flags, Kenya is required to establish a compliance and enforcement regime that would aid in promoting the sustainability of its tuna resources.¹⁹¹ The UN Fish Stocks Agreement provides for the reinforcement of flag State duties concerning control over fishing vessels and also provides mechanisms for compliance control including enforcement by flag States and port States.¹⁹² Thus, Kenya as a port State also has obligations concerning vessels entering its ports with catches of tuna. Compliance and enforcement-related measures relevant to tuna fisheries have been categorised broadly under flag States duties, port State measures, and monitoring, control and surveillance.

¹⁹⁰ Ian Payne, 'The Changing Role of Fisheries in Development Policy' (2000) 59 *Natural Resource Perspectives*, Overseas Development Institute.

¹⁹¹ LOSC, Art. 62(4)(k).

¹⁹² The UN Fish Stocks Agreement (UNFSA) and RFMO Members. The Delegation of Norway at the 2nd Joint Tuna RFMOs Meeting, San Sebastian 2009.

6.4.1 Flag State Duties

A flag State in relation to a fishing vessel, is the State under whose laws the fishing vessel is registered or licensed.¹⁹³ Under international law, States have a responsibility over the activities of vessels flying their flag. As Kenya has two tuna fishing vessels flagged to it, Kenya is under a duty to control the activities of such vessels and to ensure compliance by these vessels with the tuna management measures of the IOTC.¹⁹⁴

One of the requirements of the IOTC concerning flag States is for members to establish and maintain a record of vessels that are authorised to fish for tuna and tuna-like species in the IOTC Area.¹⁹⁵ These vessels are referred to as AFVs. Not only are such records instrumental in monitoring the activities of fishing vessels but they also aid in determining the fishing capacity. The record of AFVs should include information on the history of the vessels regarding non-compliance.¹⁹⁶ Fishing vessels must also be required to carry on board documents issued and certified by the competent authority in respect of authorisation to fish, vessel name, port in which registered and number of registration, international call sign, names and addresses of owner, length and engine power of vessel.¹⁹⁷ The vessels and gear should also be appropriately marked,¹⁹⁸ and carry a bound fishing logbook.¹⁹⁹

The *Fisheries Act* does not require a record of authorised fishing vessels to be created. Neither does the *Act* associate fishing vessel registration with the authorisation to fish. The requirement in Kenya's fisheries laws for ship masters to maintain a ship's log when operating in Kenyan waters²⁰⁰ is directed towards foreign fishing vessels only. However, in practice logbook data has been recovered from the single operational Kenyan fishing vessel since 2007.²⁰¹ Therefore, the reason for the omission in Kenya's

¹⁹³ OECD, Glossary of Statistical Terms. <http://stats.oecd.org/> (accessed 18 February 2010).

¹⁹⁴ *UN Fish Stocks Agreement*, Art. 18.

¹⁹⁵ IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*.

¹⁹⁶ IOTC, Resolution 07/02, *Concerning the Establishment of and IOTC Record of Vessels Authorised to Operate in the IOTC Area*, para 5.

¹⁹⁷ IOTC, Resolution 01/02, 'Relating to Control of Fishing Activity', para. 2.

¹⁹⁸ IOTC, Resolution 01/02, 'Relating to Control of Fishing Activity', para. 3 and 4.

¹⁹⁹ IOTC, Resolution 01/02, 'Relating to Control of Fishing Activity', para. 5.

²⁰⁰ Fisheries (Foreign Fishing Craft) Regulations, Section 31(1).

²⁰¹ Stephen Ndegwa and Dorcas Sigana, *National Report of Kenya* 2010.

fisheries laws regarding the log requirement for Kenyan-flagged vessels may lie with the fact that Kenya has only recently acquired the fishing vessel. The laws have not been amended to accommodate this fact.

Regardless of the vessel being a very recent acquisition, Kenya has a commitment to implement the relevant requirements as a flag State. It is necessary for Kenya to adopt laws and regulations that are consistent with the IOTC's requirement to establish and maintain a record of fishing vessels. Kenya has met its obligation to provide the IOTC with the national record of fishing vessels. In this regard, two longliners are registered as authorized fishing vessels with the IOTC,²⁰² although only one longliner is reported to be operational.²⁰³ Kenya has also met the requirement of the IOTC to supply the following; registration number; international call sign; names and addresses of owners; and engine power of vessel.

Although Kenya has rightfully registered its fishing vessels on the AFV list of the IOTC, it will be necessary for Kenya to provide for the establishment of a record of vessels that are authorised to fish for tuna and tuna-like species operating in its EEZ and in the IOTC area. The *Fisheries Act* requires all licensed foreign fishing vessels while in Kenya's fishery waters to report to the Director the name, call sign and country of registration of the vessel. Kenyan-flagged vessels are however not addressed and this amendment will be necessary in order for Kenya to meet the IOTC requirements.²⁰⁴ Kenya's legal rules will also need to state clearly that, fishing vessels not entered in the record of fishing vessels are not authorised to fish for, retain on board, tranship or land tuna and tuna-like species. The record of fishing vessels ought to contain the history of the vessel's fishing activities including IUU fishing activities. It is recommended that the fishing vessels be required to be marked appropriately in conformity with international standards such as the *FAO Standard Specifications for the Marking and Identification of Fishing Vessels*.²⁰⁵ This is a standard system of identifying fishing

²⁰² Record of Authorised Vessels. <http://www.iotc.org/>. (accessed 19 February 2010). The vessel names are; MV Sakoba (operational), previously flagged under Ghana, Spain, Panama and Guinea, and MV Marquardt previously flagged under Equatorial Guinea (operated to 2008).

²⁰³ Stephen Ndegwa and Dorcas Sigana, *National Report of Kenya* 2010.

²⁰⁴ IOTC, Resolution 01/02, 'Relating to Control of Fishing Activity', para. 2.

²⁰⁵ The FAO Specifications were endorsed by the eighteenth Session of the FAO Committee on Fisheries in 1989.

vessels operating or likely to operate, in waters of States other than those of the flag State.²⁰⁶ The specifications can be adopted by States on a voluntary basis.²⁰⁷

6.4.2 Port State Measures

“Port State measures are requirements established or interventions undertaken by port States which a foreign fishing vessel must comply with or is subjected to as a condition for use within the port State”.²⁰⁸ There is a growing reliance on port States to combat non-sustainable fishing practices, especially due to the failure of flag States to effectively control fishing operations carried out by vessels carrying their flags.²⁰⁹ Enhanced Port State control has increasingly become an important tool for combating IUU fishing activities.²¹⁰ IUU fishing leads to loss in economic benefits, creates environmental damage through the use of unsustainable fishing practices, and has consequences for food security.²¹¹

One of the compliance control mechanisms for the conservation and management of tuna is strengthened enforcement by port States. The UN Fish Stocks Agreement provides the right and duty of a port State to take measures to promote the effectiveness of [RFMO] conservation and management measures.²¹² Thus, Kenya has a right to take measures to ensure compliance by tuna fishing vessels in relation to port access by adopting measures in accordance with the IOTC. Kenya also has a duty to take measures to promote the effectiveness of the IOTC conservation and management measures, as it has discretion over fishing vessels calling into its ports.²¹³

According to the IOTC, Kenya may inspect documents, fishing gear and tuna catches on board fishing vessels, when such vessels are voluntarily in its ports or at its

²⁰⁶ FAO, *The Standard Specifications for the Marking and identification of Fishing Vessels* (FAO, 1989) 1.

²⁰⁷ Ibid.

²⁰⁸ Database on Port State Measures. <http://www.fao.org/fishery/psm/en> (accessed 20 February 2010).

²⁰⁹ Ibid.

²¹⁰ Adriana Fabra, Virginin Gascon and Rodolfo Werner, ‘The Use of Port State Measures to Improve Fisheries Compliance: Issues and Instruments’, <http://www.illegal-fishing.info/> (accessed 20 February 2010); Database on Port State Measures. <http://www.fao.org/fishery/psm/en> (accessed 20 February 2010).

²¹¹ Agnew *et al*, ‘Estimating the Worldwide Extent of Illegal Fishing’ (2009) 4(2), *PLoS ONE*.

²¹² *UN Fish Stocks Agreement*, Art. 23(1).

²¹³ *UN Fish Stocks Agreement*, Art. 23 (1).

offshore terminals.²¹⁴ Landings or transshipments from such vessels should be prohibited if it is established that they have violated the conservation and management measures adopted by the IOTC.²¹⁵ In the event of incidences of violation by foreign vessels as a result of port inspections, the flag States and the IOTC are to be notified.²¹⁶ The other port State measures which Kenya must implement are specifically directed at preventing, deterring and eliminating IUU fishing.²¹⁷ These measures relate to entry into port; use of ports; inspections and follow up action; role of the flag State; and requirements of developing States.

6.4.2.1 Entry into Port

Concerning entry into port, Kenya is required to implement measures in respect of advance request for port entry, designation of ports, decision making on port entry and issuing of authorisation or denial.²¹⁸ The ports to which vessels may request for entry must be publicized and a list of these provided to the IOTC. Such ports must have sufficient capacity to conduct inspections.²¹⁹ In respect to port entry, Kenya is to require information concerning vessels to be submitted at least 24 hours prior to granting entry of such vessels to its ports.²²⁰ This includes, *inter alia*, intended port of call, port State, date and time of arrival, port and date of last port call, name of the vessel, flag State, type of vessel, international call sign, vessels owners, IMO identity, vessels dimensions, fishing authorisations, and transshipment authorizations.²²¹

Based on this information port entry may be granted or denied after determining its involvement in IUU fishing activities.²²² Vessels are to be denied entry into port if it

²¹⁴ IOTC, *Resolution 05/03 Relating to the Establishment of an IOTC Programme of Inspection in Port*, para. 3.

²¹⁵ IOTC, *Resolution 05/03 Relating to the Establishment of an IOTC Programme of Inspection in Port*, para.4.

²¹⁶ IOTC, *Resolution 05/03 Relating to the Establishment of an IOTC Programme of Inspection in Port*, para.5.

²¹⁷ IOTC, *Resolution 10/11 'On Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing'*.

²¹⁸ IOTC, *Resolution 10/11*, Part 2, para.5, 6 and 7.

²¹⁹ IOTC, *Resolution 10/11*, Part 2, para.5.

²²⁰ IOTC, *Resolution 10/11*, Part 2, para.6.

²²¹ IOTC, *Resolution 10/11*, Annex I

²²² IOTC, *Resolution 10/11*, Part 2, para 7.1.

is found that they have engaged in IUU fishing activities.²²³ Exceptions may be made in cases where there is a need to inspect the vessel in order to take appropriate action in conformity with international law.²²⁴ Otherwise such vessels should be denied the use of Kenya's ports for landing, transshipping, packaging, and processing for fish and for other port services such as refuelling, resupplying, maintenance and dry docking.²²⁵

6.4.2.2. Use of Ports

In respect of the use of ports, a vessel may be denied the use of Kenya's ports for the following reasons; if it does not have a valid authorization to fish as required by its flag State;²²⁶ if it does not have authorisation to fish as required by Kenya in respect of areas under national jurisdiction;²²⁷ if the fish on board was taken in contravention of Kenya's requirements in respect of areas under its jurisdiction;²²⁸ and if there are reasonable grounds to believe that the vessel was engaged in IUU related activities.²²⁹

Nevertheless, a vessel shall not be denied the use of port services essential to the health or safety of the crew or safety of the vessel if these needs are duly proven,²³⁰ or for scrapping of the vessel.²³¹ The decisions made regarding the denial of the use of ports or port entry should be communicated to the flag State.

6.4.2.3 Inspections and Follow-Up Actions

Following decisions on port entry and use of ports, Kenya is required to carry out inspections of fishing vessels calling into its ports. Inspections should be carried out for at least 5% of landings or transshipments in Kenya's ports annually.²³² Such inspections shall involve the monitoring of the entire discharge or transshipment and

²²³ IOTC, Resolution 10/11, Part 2, para 7.4.

²²⁴ IOTC, Resolution 10/11, Part 2, para 7.5.

²²⁵ IOTC, Resolution 10/11, Part 2, para 7.6.

²²⁶ IOTC, Resolution 10/11, Part 3, para 9.1(a).

²²⁷ IOTC, Resolution 10/11, Part 3, para 9.1(b).

²²⁸ IOTC, Resolution 10/11, Part 3, para 9.1(c).

²²⁹ IOTC, Resolution 10/11, Part 3, para 9.1(e).

²³⁰ IOTC, Resolution 10/11, Part 3, para 9.2(a).

²³¹ IOTC, Resolution 10/11, Part 3, para 9.2(b).

²³² IOTC, Resolution 10/11, Part 4, para 10.2.

ascertaining the quantities by species landed or transhipped.²³³ The functions to be carried out by inspectors include; verification of vessel identification documentation and information relating to the owner;²³⁴ vessel's flag and markings (e.g. name and IMO identification number);²³⁵ authorisations of fishing; review all documentation and records held onboard the vessel including electronic and VMS data;²³⁶ examine fishing gear;²³⁷ and fish.²³⁸

Inspections of vessels in port are to be carried out by qualified inspectors authorized for that purpose.²³⁹ In this respect, the training programme for inspectors may include the following elements; ethics; health safety and security issues; relevant national laws and regulations, international law and conservation and management measures of the IOTC; collection, evaluation and preservation of evidence; report writing and interview techniques; analysis of information such as logbooks and electronic documentation; vessel boarding and inspection; verification and validation of information related to landing, transshipment and processing; and identification of fish species, vessels and gears.²⁴⁰

The inspectors are to identify themselves to the master of the vessel prior to an inspection,²⁴¹ and inspect all relevant areas of the vessel relevant to verifying compliance with relevant conservation and management measures.²⁴² The master of the vessels should be required to cooperate in submitting all relevant information to the inspectors.²⁴³ The written report of the results of an inspection shall include details on, *inter alia*, the inspecting authority; port of inspection; name of principal inspector; commencement and completion of inspection; confirmation of advanced notification;

²³³ IOTC, Resolution 10/11, Part 4, para 10.3.

²³⁴ IOTC, Resolution 10/11, Annex 2(a).

²³⁵ IOTC, Resolution 10/11, Annex 2(b).

²³⁶ IOTC, Resolution 10/11, Annex 2(d).

²³⁷ IOTC, Resolution 10/11, Annex 2(e).

²³⁸ IOTC, Resolution 10/11, Annex 2(g).

²³⁹ IOTC, Resolution 10/11, Part 4, para 11.2(a).

²⁴⁰ IOTC, Resolution 10/11, Annex 5.

²⁴¹ IOTC, Resolution 10/11, Part 4, para 11.2(b).

²⁴² IOTC, Resolution 10/11, Part 4, para 11.2(c).

²⁴³ IOTC, Resolution 10/11, Part 4, para 11.2(d).

vessel name; flag State; type of vessel; port of registry; and vessel owner.²⁴⁴ Such a report shall be transmitted to the relevant parties within a period of three full working days including the master of the vessel, the flag States and the IOTC secretariat.²⁴⁵

Where, following inspections a vessel is confirmed to have engaged in IUU fishing activities, the flag State, the IOTC and other relevant organisations should be notified.²⁴⁶ Such a vessel is to be denied the use of Kenya's ports in a manner consistent with the IOTC conservation and management measures.²⁴⁷ Kenya is required to maintain information on recourse and avail it to the relevant parties whenever necessary.²⁴⁸

6.4.2.4 Role of Kenya as a Flag State

According to the IOTC, Kenyan-flagged vessels are required to cooperate with port State inspections.²⁴⁹ In the event that such a vessel is believed to have been engaged in IUU activities and is seeking entry to or is in the port of another State, Kenya should request that State to carry out an inspection as appropriate and take other measures consistent with the IOTC requirements.²⁵⁰ Kenyan-flagged vessels should be encouraged to tranship, package, and process fish and use other port services in ports that are in accordance with the IOTC requirements.²⁵¹

Where following an Inspection, a report is submitted to Kenya indicating that a Kenya-flagged vessel is believed to have engaged in IUU fishing activities, such a matter shall be immediately and fully investigated and upon sufficient evidence, enforcement action should be taken in accordance with Kenya's laws and regulations.²⁵² A report on the action taken in respect of a Kenyan-flagged vessel which has been determined to have engaged in IUU activities should be made available to other relevant

²⁴⁴ IOTC, Resolution 10/11, Annex 3.

²⁴⁵ IOTC, Resolution 10/11, Part 4, para 14.

²⁴⁶ IOTC, Resolution 10/11, Part 4, para 15.1(a).

²⁴⁷ IOTC, Resolution 10/11, Part 4, para 15.1(b).

²⁴⁸ IOTC, Resolution 10/11, Part 4, para 16.

²⁴⁹ IOTC, Resolution 10/11, Part 5, para 17.1.

²⁵⁰ IOTC, Resolution 10/11, Part 5, para 17.2.

²⁵¹ IOTC, Resolution 10/11, Part 5, para 17.3.

²⁵² IOTC, Resolution 10/11, Part 5, para 17.4.

States, port States and the IOTC.²⁵³ Kenya has a duty of ensuring that the measures applied to fishing vessels flying its flag are effective in preventing, deterring and eliminating IUU fishing activities.²⁵⁴ Kenya is also required to cooperate with other States through the IOTC to establish appropriate funding mechanisms to support developing States in implementing the requirements of the IOTC.²⁵⁵ Such funding mechanisms shall be directed towards enhancing capacity in areas such as MCS, port managers, inspectors, and enforcement and legal personnel,²⁵⁶ and MCS and compliance activities relevant to port States measures.²⁵⁷

The *Fisheries Act* of Kenya has very limited provisions relating to port State measures. According to the *Fisheries Act*, a vessel wishing to enter a Kenyan port after it has been given clearance to fish in the EEZ is required to notify the Director not less than twenty-four hours before its intended entry.²⁵⁸ Such a vessel should also provide the name, call sign, and flag State of the craft; the intended port of entry; and the purpose of the intended entry.²⁵⁹ Every vessel that has been authorised to enter a Kenyan port is required to proceed directly and immediately to an inspection port.²⁶⁰

The port entry requirement under the *Fisheries Act*, for fishing vessels to make an advance request of port entry is consistent with Resolution 10/11 of the IOTC.²⁶¹ However, contrary to the IOTC requirements, the *Fisheries Act* does not fully provide the relevant vessel identification information to be given prior to entry into port. The omissions include date and time of arrival, date of last port call, name of the vessel, type of vessel, vessels owners, IMO identity, vessels dimensions, fishing authorisations, and transshipment authorisations. Further, the terms and conditions for decision making in respect of port entry and what would constitute denial of entry are not provided, nor have conditions for the use of ports been provided as required by the IOTC.²⁶² There are

²⁵³ IOTC, Resolution 10/11, Part 5, para 17.5.

²⁵⁴ IOTC, Resolution 10/11, Part 5, para 17.6.

²⁵⁵ IOTC, Resolution 10/11, Part 6, para 18.4.

²⁵⁶ IOTC, Resolution 10/11, Part 6, para 18.4(b).

²⁵⁷ IOTC, Resolution 10/11, Part 6, para 18.4 (b).

²⁵⁸ Fisheries (Foreign Fishing Craft) Regulations, Section 25.

²⁵⁹ Fisheries (Foreign Fishing Craft) Regulations, Section 25(a-c).

²⁶⁰ Fisheries (Foreign Fishing Craft) Regulations, Section 22.

²⁶¹ IOTC, Resolution 10/11, Part 2, para 5.

²⁶² IOTC, Resolution 10/11, Part 3, para 9.

no regulations on the inspection of vessels in port and the procedures to be followed during such inspections. Similarly the procedures for handling Kenyan-flagged vessels when in port are not provided.

Consistent with this measure, Kenya may further provide the conditions that could lead to denying port entry to both foreign and Kenyan-flagged fishing vessels. For example, fishing vessels may be required to provide information detailing their fishing trips in order to ascertain that their fishing activities are compliant with Kenya's national requirements. The IOTC resolution on Port State measures was adopted very recently in March 2010 during the Fourteenth Session.²⁶³ It is therefore a very new development and also quite detailed to most of the Indian Ocean States including Kenya. The implementation of this measure by Kenya may therefore take a while.

In order to regulate the activities of vessels within its EEZ and the IOTC Area, there is a need for adequate enforcement action against vessels that carry out fishing activities that are not in accordance with the conservation and management measures adopted by the IOTC, and by Kenya. For Kenya's regulations as a port State to take effect there is a need for enforcement mechanisms to be instituted and the appropriate enforcement provisions established to empower authorised officers to execute their duties. It would be beneficial for Kenya to adopt enforcement measures to ensure compliance with its regulations for port State control. Such measures would include requirements related to control of port entry and port services, control of fish landing, processing and transshipment, the use of designated ports, documentation, and port inspection. Kenya may impose penalties for breach of these regulations or deny port access to fishing vessels that are non-compliant. In addition to the requirement for foreign fishing vessels to comply with the relevant management measures, Kenya may also require the owners of these vessels to cooperate in enforcement of conservation and management measures for tuna. Finally, Kenya may sign the FAO Port State Measures Agreement as indicative of international good practice.

²⁶³ IOTC, *Report of the Fourteenth Session*, Busan, Korea 105 March 2010, para 39.

6.4.3 Monitoring, Control and Surveillance Measures

Monitoring, Control and Surveillance (MCS) is an integral component of tuna fisheries management.²⁶⁴ Robust national MCS systems are essential elements for improving compliance.²⁶⁵ Such systems are used to collect information on the fishery and fishers concerning, *inter alia*, fishing vessels and gear, type and amount of catch, where fish are caught, and what happens to them after they are caught.²⁶⁶ This information can aid in the setting and monitoring of the rules of the fishery,²⁶⁷ as it is utilised in combination with surveillance of fishing vessels, to deter fishers who violate the rules of the fishery or to apprehend and punish them if they still do so.²⁶⁸ Effective MCS programmes presume that States are willing, and capable, of exercising effective control over their vessels, and that flag States participating in international fisheries will take measures to ensure that their vessels comply with the relevant international instruments and the management arrangements in a particular fishery.²⁶⁹

Among the international requirements related to compliance and enforcement with respect to tuna resources in the EEZ, is the development of national legal systems that govern fisheries control.²⁷⁰ In this regard Kenya is obliged to establish an enforceable national regulatory framework that provides directions for MCS, to ensure the effective control of the fishing activities in its EEZ, including compliance with its laws and regulations. Such MCS measures include a vessel monitoring system (VMS),²⁷¹ an observer scheme,²⁷² and a boarding and inspection scheme.²⁷³

²⁶⁴ FAO, *Essential Role of Monitoring, Control and Surveillance*, Twenty Second Session of the Committee on Fisheries, Rome, Italy 17-20 March 1997.

²⁶⁵ Monitoring, Control and Surveillance from Policy to Implementation, <http://www.stopillegalfishing.com> (accessed 21 February 2010).

²⁶⁶ Ibid.

²⁶⁷ Ibid.

²⁶⁸ Ibid.

²⁶⁹ FAO, *Essential Role of Monitoring, Control and Surveillance*, Twenty Second Session of the Committee on Fisheries, Rome, Italy 17-20 March 1997.

²⁷⁰ LOSC, Art. 73.

²⁷¹ LOSC, Art. 62(4)(e); *UN Fish Stocks Agreement*, Arts. 5(j) and 18(3)(g)(iii); *FAO Code of Conduct*, Art. 7.7.3.

²⁷² LOSC, Art. 62(4)(g); *UN Fish Stocks Agreement*, Arts. 18(3)(g)(ii); *FAO Code of Conduct*, Art. 8.4.3.

²⁷³ LOSC, Art. 73(1); *UN Fish Stocks Agreement*, Art. 21.

6.4.3.1 Vessel Monitoring Systems

A fishing vessel monitoring system is a programme of fisheries surveillance which provides information on the vessels' position and activity.²⁷⁴ The use of VMS is being increasingly adopted by States worldwide as a tool that can be used in the Monitoring, Control and Surveillance of fishing vessels to enhance compliance.²⁷⁵ VMS allows the transmission of catch and effort data from fishing vessels to a monitoring agency in real time.²⁷⁶ Hence, catch data entered and transmitted at sea after a fishing operation commits the vessel operator to a specific estimate of catch without the knowledge of whether the vessels will be inspected at sea or at the point of landing.²⁷⁷ This is very instrumental for catch declarations. Other data that may be transmitted by VMS may relate to notification for port entry, distress, or information concerning the activities of other vessels.²⁷⁸ For a VMS to be useful, the vessel must be licensed and fitted with the relevant equipment.²⁷⁹

The implementation of a VMS is an international requirement.²⁸⁰ The IOTC also requires Kenya to install a satellite-based VMS for vessels greater than 15metres in length,²⁸¹ and to collect information regarding vessel identification, current geographical position of the vessel and the date and time of the fixing of the position of the vessel.²⁸² This measure can also be applied to other vessels of different sizes if it is deemed necessary.²⁸³ Further, the land-based national Fisheries Monitoring Centre should be able to receive all relevant information through the VMS and also be equipped for automatic data processing and electronic data transmission.²⁸⁴

On the basis of the Kenyan *Fisheries (Foreign Fishing) Regulations*, foreign fishing vessels are required to install and maintain in working order, a transponder and

²⁷⁴ Fishing Vessel Monitoring Systems, <http://www.fao.org> (accessed 21 February 2010).

²⁷⁵ Vessel Monitoring Systems, <http://www.fao.org> (accessed 21 February 2010).

²⁷⁶ FAO, *Fishing Operations, 1. Vessel Monitoring Systems*, FAO Technical Guidelines for Responsible Fisheries (FAO, 1998) 5.

²⁷⁷ Ibid.

²⁷⁸ Ibid.

²⁷⁹ Vessel Monitoring Systems, <http://www.fao.org> (accessed 21 February 2010).

²⁸⁰ LOSC, Art. 62(4)(e); *UN Fish Stocks Agreement*, Arts. 5(j) and 18(3)(g)(iii)

²⁸¹ IOTC, Resolution 06/03, 'On Establishing a Vessel Monitoring System Programme'.

²⁸² IOTC, Resolution 06/03, para 3.

²⁸³ IOTC, Resolution 06/03, para 11.

²⁸⁴ IOTC, Resolution 06/03, para 4.

navigation equipment installed for purposes of identification and location of the vessel.²⁸⁵ There are however no provisions for Kenyan-flagged vessels in respect of VMS. Nevertheless, Kenya is implementing a vessel monitoring system which commenced in 2009.²⁸⁶ The objective of the VMS in Kenya is to gather fisheries data and also to monitor the activities of foreign fishing vessels to ensure compliance and deter illegal fishing activities by such vessels.²⁸⁷ For Kenya to achieve its purpose for implementing a VMS, it would need to adopt measures that would provide a mechanism to enforce its national regulations such as revoking or suspending a foreign fishing vessel license at any time for failure to comply with the provisions of the *Fisheries Act*, its regulations, or management measures, or conditions of the license.

6.4.3.2 Observer Programmes

The implementation of an observer programme is a requirement under international fisheries instruments.²⁸⁸ The requirement for observers on board foreign fishing vessels is very significant for accurate data collection from industrial tuna fleets. An observer program is one of the least costly or restrictive of the operations of industrial fishing fleets.²⁸⁹ Under the LOSC, one of the conditions that States can establish in its laws and regulations which should be met by DWFNs participating in tuna fisheries in its EEZ is the placing of observers on board such vessels.²⁹⁰ The IOTC requires vessels fishing for tuna to be covered by the observer scheme, and that the minimum level of coverage to be met.²⁹¹ Such observers are to be facilitated in their work in order to execute their duties competently and in a safe manner.²⁹²

²⁸⁵ Fisheries (Foreign Fishing Craft) Regulations, Section 10(n).

²⁸⁶ Stephen Ndegwa and Dorcas Sigana, *National Report of Kenya* 2010.

²⁸⁷ IOTC, IOTC-SC-INF22, Fisheries Department, National report of Kenya, 2008.

²⁸⁸ LOSC, Art. 62(4)(g); *UN Fish Stocks Agreement*, Art. 18(3)(g)(ii); *FAO Code of Conduct*, para.8.4.3; IOTC, *Recommendation 01/01 Concerning the National Observer Programmes for Tuna Fishing in the Indian Ocean*; *Resolution 08/02-Annex 3 IOTC Regional Observer Programme*.

²⁸⁹ Gus van Helvoort, *Observer Program Operations Manual*, FAO Fisheries Technical Paper 275 (FAO, 1986).

²⁹⁰ LOSC, Art. 62(4)(g).

²⁹¹ IOTC, *Recommendation 01/01 Concerning the National Observer Programmes for Tuna Fishing in the Indian Ocean*; *Resolution 08/02-Annex 3 IOTC Regional Observer Programme*.

²⁹² IOTC, Resolution 10/04, para. 5(e).

The requirement to take on board observers is a condition of the fishing license according to the Kenyan *Fisheries (Foreign Fishing Craft) Regulations*.²⁹³ This requirement is consistent with the IOTC requirement for tuna fishing vessels to be covered by an observer scheme. The Regulations state that the Director may assign an observer to any foreign fishing craft.²⁹⁴ The master of the fishing vessel to which an observer has been assigned is also required to avail the vessel at designated places and times for purposes of embarking and disembarking the observer.²⁹⁵ The observer should also be accommodated and fed according to the standards provided to the officers of the fishing craft;²⁹⁶ have access to utilise communications equipment and personnel;²⁹⁷ and be accorded reasonable assistance to enable him/her to carry out his/her duties while aboard the fishing vessel.²⁹⁸ These requirements are consistent with the IOTC measures provided by resolution 10/04.

Although the provisions for the implementation of a national observer programme are in place for foreign fishing vessels, the *Fisheries Act* does not provide for national observers. Further, Kenya is not implementing this programme yet.²⁹⁹ The implementation of such a program is hampered by logistical problems stemming from the duration of fishing vessels at sea which makes it difficult for observers to disembark whenever they need to be replaced.³⁰⁰ Generally, it is expensive to deploy observers.³⁰¹ Such an expense may be prohibitive for Kenya and it may be a reason for Kenya not to implement an observer programme. Kenya is however considering the implementation of a regional observer program being initiated by the Western Indian Ocean coastal States which include Tanzania, Mauritius, Seychelles, Madagascar and Mozambique.³⁰² An observer scheme if implemented would provide much needed data essential for the

²⁹³ The Fisheries (Foreign Fishing Craft) Regulations, Section 10(e).

²⁹⁴ The Fisheries (Foreign Fishing Craft) Regulations, Section 44(1).

²⁹⁵ The Fisheries (Foreign Fishing Craft) Regulations, Section 44(1)(a).

²⁹⁶ The Fisheries (Foreign Fishing Craft) Regulations, Section 44(1)(b).

²⁹⁷ The Fisheries (Foreign Fishing Craft) Regulations, Section 44(1)(c).

²⁹⁸ The Fisheries (Foreign Fishing Craft) Regulations, Section 44(1)(d).

²⁹⁹ Stephen Ndegwa and Dorcas Sigana, *National Report of Kenya* 2010.

³⁰⁰ Stephen Ndegwa, *National Report of Kenya*, 2008.

³⁰¹ Chang *et al*, 'How to Collect Verifiable Length Data on Tuna from Photographs: An Approach for Sample Vessels' (2009) 66(5) *ICES Journal of Marine Science* 907, 907.

³⁰² Association for Professional Observers, The catch log (2009) 12(2) *Mail Buoy* 5. <http://www.apo-observers.org/mailbuoys/sum09MailBuoy.pdf> (accessed 16 November 2010).

sustainable management of tuna fisheries and it would also aid in monitoring the practice of foreign fishing vessels operating in Kenya's EEZ, with a view to promote compliance.

Observers require specialist training to enable them to collect and verify tuna fisheries data on catches of both target and non-target species, fishing effort, catch composition and report on compliance with Kenya's fisheries regulations. The lack of knowledge and technical expertise necessary to implement the observer scheme might be a major reason why Kenya is yet to put it in practise. The calibre of the observers placed on board fishing vessels is fundamental to the success of any observer programme.³⁰³ Proper training and good standards of ethics are essential. It is thus important to create a structure, training and monitoring system that encourages superior performance and rewards observers since they mostly work in an unsupervised capacity.³⁰⁴ In addition to the existing legal authority to place observers on board foreign fishing vessels participating in its tuna fisheries, Kenya may develop a more elaborate scheme in order to implement an effective observer programme. The implementation of such a scheme requires Kenya to adopt specific and appropriate measures on the role of the observer. It will also be necessary for the fisheries laws to provide for national observes.

An effective observer scheme would state the specific activity to be carried out by the observers including their level of authority (enforcement powers) and duties. Such a scheme would also state the nature of information to be collected by the observer and the terms of their appointment including the conditions under which observers may operate. The conditions would include for example, the responsibility of the vessel owner towards the observer-like feeding, insurance, safety, remuneration and travel expenses. When functions of the observer are backed by legislation it becomes easier to deal with any conflicts that may arise between the captain and the observer.³⁰⁵ It may also be necessary to state the authority responsible for the appointment of observers. Failure to do so may result in an inappropriate choice made just to fulfil a legal

³⁰³ S L Davies and J E Reynolds (eds), *Guidelines for Developing an At- Sea Fishery Observer Programme*, FAO Fisheries Technical Paper No. 414 (Rome, 2002).

³⁰⁴ Ibid.

³⁰⁵ Ibid.

obligation.³⁰⁶ This may defeat the purpose of the observer programme in the event of a wrong choice being made. Kenya may include these details in its fisheries regulations.

Kenya's fisheries laws and regulations may also need to provide for the implementation of a protocol concerning the engagement of observers. For example, the authority responsible for the deployment of observers would need to give the vessel operator a notice of intention before the observer is placed on the fishing vessel. The *Fisheries Act* prohibits the obstruction of any authorized officer in the exercise of the powers conferred on him.³⁰⁷ This may include the role played by observers. However observers are not listed as "authorised officers". As an additional measure Kenya's observer scheme may also impose conditions relating to the safety of observers while on board fishing vessels and penalties for non-compliance to these terms.

6.4.3.3 Regulating Transshipment

International law provides the right for Kenya to adopt regulations that enable the prohibition of transshipments where it has been established that the catch has been taken in a manner which undermines the effectiveness of the IOTC conservation and management measures on the high seas.³⁰⁸ Kenya may also verify data from transshipment reports.³⁰⁹ The IOTC restricts transshipments in the IOTC Area and establishes conditions for at-sea transshipments such as flag States authorisation³¹⁰ and regional observer programme.³¹¹ Except for large scale tuna vessels that participate in the IOTC regional observer programme which can authorise transshipments at sea, the IOTC also requires the transshipment activities of tuna and tuna-like species to take place in port.³¹² Further, the IOTC prohibits the transshipment of fish if it is established through inspection that the vessel has undermined IOTC conservation and management measures.³¹³

³⁰⁶ Ibid.

³⁰⁷ The *Fisheries Act 1989*, Section 17.

³⁰⁸ *UN Fish Stocks Agreement*, Art. 23(3).

³⁰⁹ *UN Fish Stocks Agreement*, Art. Annex I, Art. 6(c).

³¹⁰ IOTC, Resolution 08/02, para. 11 and 12.

³¹¹ IOTC, Resolution 08/02, para. 16 and 17.

³¹² IOTC, Resolution 08/02, para 1.

³¹³ IOTC, Resolutions 02/04 and 99/02.

In Kenya, the transshipment of fish at sea is prohibited. According to the *Fisheries Act*, the transshipment of fish can only be carried out from a foreign fishing vessel to another vessel at designated ports, and at a time authorised for the purpose by the Director, and in accordance with such conditions as the Director may specify.³¹⁴ Aside from the Director, an authorised officer may also provide directions for transshipment.³¹⁵ Transshipment of tuna in Kenya is carried out at the port of Mombasa, mainly to supply the tuna processing plant. For Kenya's national regulations in respect of transshipment to be effective, it is necessary for violations to be detected, in order for enforcement action against fishing vessels to be applied. However, Kenya's fisheries surveillance capability is limited,³¹⁶ making it difficult to detect violations that may occur at sea. It is highly likely that transshipments at-sea go undetected. Kenya needs to make it a priority to establish a national surveillance program if it is to effectively monitor the activities of fishing vessels operating in its EEZ.

In as much as Kenya has enacted laws on transshipment as required by the IOTC, the regulations do not provide any restrictive or punitive measures in the event of non-compliance to Kenya's fisheries laws and regulations. Another gap in Kenya's fisheries regulations in respect of transshipment is concerned with the prohibition of transshipment by tuna fishing vessels found to be in violation of its conservation and management measures. There remains a need for Kenya's fisheries regulations on transshipment to include measures for deterrence and punitive purposes if they are to be effective.

6.4.4 Challenges of Enforcement

By establishing its EEZ under the LOSC, Kenya has not only been confronted with challenges in realising its opportunities and the management responsibilities for the tuna resources in such a vast fishing zone, but it is also challenged by the enforcement of its jurisdiction in the EEZ. Kenya has made efforts to fulfil its conservation duties in the EEZ by implementing fisheries conservation and management measures. However, it has limited capacity and the capabilities to enforce the measures that have been

³¹⁴ Fisheries (Foreign Fishing Craft) Regulations, Section 20(1).

³¹⁵ Fisheries (Foreign Fishing Craft) Regulations, Section 20(2).

³¹⁶ Stephen Ndegwa, *National Report of Kenya*, 2007.

implemented so far. Kenya is challenged by its limited MCS capabilities.³¹⁷ This is because Kenya lacks the financial, institutional and technical resources with which to monitor its tuna resources. As a result, the Kenyan EEZ is highly unregulated,³¹⁸ and Kenya can neither control the activities of licensed foreign fishing vessels nor curtail the illegal fishing activities in its EEZ. Thus, it becomes difficult to detect, intercept and prosecute foreign fishing vessels operating in the EEZ, which might be in violation of the Kenyan fisheries regulations.

The control of foreign fishing vessels operating in the Kenyan EEZ is dependent on good faith and self-reporting.³¹⁹ Since these vessels hardly ever report catches to national authorities, there is little information on species composition, quantities of catches taken by commercial operators, sources and the exact time of capture of those catches.³²⁰ Further, the Department of Fisheries is only able to license those foreign fishing vessels whose owners put forward their request for a fishing license.³²¹ Hence, a number of foreign fishing vessels operating in Kenya's EEZ are unlicensed. There is a need for Kenya to solicit the necessary support required to build its technical and financial capacity and to enhance its capabilities in monitoring, control and surveillance in order to meet its international and regional obligations in respect of compliance and enforcement.

Regardless of its legislative and enforcement challenges, Kenya has an obligation under the LOSC to avail to third States, the surplus tuna resources in its EEZ which it had no capacity to harvest.³²² Thus, Kenya could utilise the tuna resources in its EEZ and increase the economic benefits derived from them by establishing a fisheries development programme. Through such a programme strategies to develop its tuna fisheries could be formulated.

³¹⁷ <ftp://ftp.fao.org> (accessed 16 November 2010).

³¹⁸ Evanson Chege, Andrew Wamukota and Nyawira Muthiga, 'Promotion and Management of Marine Fisheries in Kenya' in Gerd Winter (ed), *Towards Sustainable Fisheries Law: A Comparative Analysis* (IUCN, 2009) 122. The East coast of Africa is known to be one of the world's most unregulated fisheries areas.

³¹⁹ Ibid 110.

³²⁰ George Habib, *National Report on Fisheries Potential Kenya's EEZ*, Commonwealth Secretariat, London (2003).

³²¹ Johnson Kariuki, Former Assistant Director of Fisheries- Personal communication, March 12 2007.

³²² *LOSC*, Art. 62(2).

6.5 Issues Associated with Kenya's Participation in the IOTC

As a member of the IOTC, Kenya participates in both the regular and technical meetings and also makes its financial contributions.³²³ Except for the Twelfth Session of the IOTC, Kenya has consistently attended the annual regular meetings of the IOTC since the ninth Session in 2005.³²⁴ In particular, Kenya had a delegation of five senior government officials attending the ninth Session of the IOTC. It is assumed that such a gesture was intended to invite the Kenyan government to recognise the importance of participating in the work of the IOTC in order to support the efforts of the Department of Fisheries in the conservation and management of the tuna fishery. The other very significant meetings that Kenya has attended quite consistently since 2007 to date are the scientific meetings.³²⁵ Kenya only failed to attend the ninth Session of the Scientific Committee in 2006.

Aside from the regular technical meetings, Kenya is also expected to play its role as a member of any other special technical group which may come up occasionally, such as the IOTC performance review panel to which Kenya was appointed in 2007.³²⁶ Although Kenya attended the subsequent meetings of the performance review panel, it failed to attend the first meeting. It is very likely that Kenya did not attend this meeting for financial reasons. Kenya has otherwise shown its keenness in supporting the efforts of the technical meetings by hosting some of them.³²⁷

As discussed in chapter 3(3.4.3), the administrative budget expenses of the IOTC are derived from Members' contributions. Each Member of the IOTC undertakes to contribute annually its share of the budget,³²⁸ which is determined in accordance with a scheme which the IOTC adopts and amends as required by consensus.³²⁹ Each

³²³ Kenya's financial contribution to the IOTC in 2008 was US\$13,733.00 for an average tuna catch of 181 metric tonnes. See IOTC, Report of the Twelfth Session, Muscat, Oman, 7-11 June 2008.

³²⁴ During the ninth Session of the IOTC which was the first official meeting for Kenya after becoming a Member in 2004 (The Director of Fisheries attended this meeting), Kenya had a delegation of five senior government officials including the Deputy Secretary in the Ministry, Deputy Director of Fisheries, Assistant Director of Fisheries, Fisheries Officer and State counsel from the Attorney General's office. See IOTC, Report of the Ninth Session Victoria, Seychelles 30 May-3 June 2005.

³²⁵ IOTC, Scientific Committee Meetings 2007, 2008, 2009 and 2010.

³²⁶ IOTC, *Report of the Twelfth Session of the Scientific Committee*, Victoria, Seychelles, 30 November-4 December 2009.

³²⁷ Kenya will be hosting the Technical Committee on Allocation and Criteria on 16-18 February 2011. <http://www.iotc.org> (accessed 22 February 2010).

³²⁸ The IOTC Agreement, Art. XIII(1).

³²⁹ The IOTC Agreement, Art. XIII(3)(a).

Member is assessed an equal basic fee and a variable fee based, *inter alia*, on total catch and landings and per capita income of each Member.³³⁰ The IOTC sets out a scheme for the calculation of contributions to the administrative budget of the IOTC as follows:

- a) ten per cent of the total budget is divided equally among all Members;
- b) ten percent of the total budget is divided equally among Members having a fishing operations in the IOTC Area;
- c) forty per cent of the total budget is allocated among Members based on per capita GNP for the calendar year three years before the year to which the contributions relate, weighted according to the economic status. Kenya is classified as a low income Member and is weighted by the factor of 0;
- d) forty percent of the budget is allocated among Members based on their average catch in three calendar years beginning with the year five years before the year to which the contributions relate, weighted by a coefficient reflecting their development status. Kenya's coefficient is 1.³³¹

The IOTC decides upon its annual budget at each annual meeting. Members' assessed contributions are to be paid on the first day of the financial year and at least be paid in full not later than 150 days after that date.³³² Kenya's contributions duly paid, to the IOTC budgets are recorded in the table below:

Table 3. Kenya's Contributions to the IOTC³³³

| Year | Contribution (in USD) |
|------|-----------------------|
| 2005 | 11,441.00 |
| 2006 | 13,165.00 |
| 2007 | 14,529.00 |
| 2008 | 13,733.00 |
| 2009 | 14,880.00 |
| 2010 | 15,974.00 |

Although Kenya has been reasonably consistent in attending the IOTC meetings and submitting its contributions, it is also important for Kenya to fully implement the

³³⁰ The IOTC Agreement, Art. XIII(3)(b).

³³¹ IOTC, Funding and Budget, <http://www.iotc.org> (accessed 22 February 2010).

³³² IOTC, Amended Financial Regulations, Regulation 5(5.6).

³³³ IOTC, Reports of the IOTC Ninth (2005), Tenth(2006), Eleventh(2007), Twelfth(2008), Thirteenth(2009) and Fourteenth (2010) Sessions.

conservation and management measures adopted by the IOTC. As a Member of the IOTC, Kenya has committed to implement such obligations. Kenya also has an obligation to discharge its international obligations in this regard. As such, Kenya's commitments towards the conservation and management of tuna including the collection and sharing of data, and compliance and enforcement need to be met.

6.6 Conclusion

In this chapter, the Kenyan legal and regulatory framework and management practices relative to the management and conservation of the tuna resources under Kenya's jurisdiction have been analysed. Kenya's national framework and tuna management practices are assessed using the findings from chapters 2 and 4 of the thesis in order to ascertain the consistency of this framework with the international and regional legal requirements. It is shown that Kenya has not fully adopted measures consistent with its international and regional obligations for the sustainable utilisation of tuna, and that Kenya's current legal and policy framework, and management practices do not adequately address the long-term sustainability of its tuna resources.

A number of gaps were identified in the implementation of conservation measures for tuna including fishing capacity and setting of catch limits. Kenya has not developed a NPOA-Capacity. Neither has it set catch limits for any of the tuna species as required by the IOTC. Concerning non-target species, Kenya's fisheries laws have not provided for the conservation and management of seabirds and sharks as specifically required by the IOTC. The measures adopted for sea turtles are also incomplete. In respect of data collection and sharing, there are no provisions requiring submission of data on non-target species. The timeliness for providing such data is also not emphasised. Kenyan fisheries laws and regulations fail to adequately provide punitive measures for non-compliance. Thus, Kenya would need to address these gaps by reviewing its current fisheries regulations and adopting the appropriate measures and practices. The following chapter discusses the utilisation of tuna resources in Kenya with a view to examining the alternative strategies that can be employed for the development of Kenya's tuna resources

CHAPTER 7

OPTIONS FOR THE SUSTAINABLE UTILISATION OF TUNA RESOURCES IN KENYA'S EEZ

7.1 Introduction

The conservation, management and utilisation duties by coastal States concerning the fisheries resources in their EEZs are addressed in Articles 61 and 62 of the LOSC. Article 61 of the LOSC sets out the conservation obligations of the coastal State for managing the [tuna] resources in the EEZ, while Article 62 concerns the utilisation of such resources. These articles underscore the obligation of the coastal State to manage the [tuna] resources in its EEZ responsibly, so as to maximise the contribution of EEZ resources and uses towards the development process of that State, while conserving and protecting them.¹ Coastal States are thus required to develop policy frameworks aimed at meeting these obligations of the LOSC and also to maximise the economic benefits from the tuna resources in their EEZs.

Kenya is under an obligation to promote the objective of optimum utilization of the tuna resources in its EEZ,² as a result of extending its fisheries jurisdiction when it claimed an EEZ. Since the extension of jurisdiction limited access to fishing grounds which had traditionally been fished by DWFNs, Kenya is required to make provision for access to the surplus tuna resources in its EEZ by foreign fishing States.³ Kenya also has the prerogative of determining the terms and conditions of access to the tuna resources in its EEZ by such States. However, the levels of exploitation of such resources should be set at conservative levels and be justified by conservation principles established in the LOSC and within the IOTC framework.⁴

This chapter reviews the various approaches available for Kenya to sustainably utilise tuna fisheries resources in its EEZ jurisdiction. The chapter proceeds as follows. The first section reaffirms the obligation of coastal States to promote the objective of optimum utilisation of fisheries resources in the EEZ, as required by the LOSC. This

¹ Lawrence Juda, 'The Exclusive Economic Zone and Ocean Management' (1987) 18(3) *Ocean Development and International Law* 305, 309.

² LOSC, Art. 62(1).

³ LOSC, Art. 62.

⁴ Donna R. Christie, 'It Don't Come EEZ: The Failure and Future of Coastal State Fisheries Management' (2004) 14(1), *Journal of Transnational Law and Policy* 1, 6.

requirement creates the need for Kenya to establish appropriate arrangements for the purpose of utilising the tuna stocks in its EEZ, while conserving and managing them responsibly.⁵ The second section outlines Kenya's utilisation efforts to date and demonstrates that Kenya's tuna fisheries are not very well developed. The third, fourth and fifth sections examine various strategies that may be adopted by Kenya, for the utilisation of tuna resources under its jurisdiction, as well as related issues and challenges. In these sections, lessons are drawn from the diverse experiences of other States as a guide for Kenya. The strategies examined include domestic tuna industry development and fisheries access agreements, including the European Union Fisheries Partnership Agreements (FPAs). The chapter emphasises the need for Kenya to develop a rational management regime for the tuna resources in its EEZ in order to fulfil its international obligations.

7.2 Optimum Utilisation of the EEZ Resources

The emergence of the EEZ concept did not only present significant opportunities for States to benefit economically by exploiting the tuna resources within the area under their national jurisdiction, but it also created a dilemma for developing coastal States as to how best to realise the social and economic potential of such resources. These States found themselves in a situation where they had to strike a balance between their obligation to conserve the tuna stocks in the EEZ and their aspirations to maximise the benefits from such stocks. As discussed in chapter 2(2.4.1), developing coastal States aspired for economic development and increased control over the [tuna] resources within their EEZ when they extended their fisheries jurisdiction. They also hoped that the risk of overexploitation of their EEZ resources by DWFNs from developed States would be reduced, and that the economic benefits from such resources would be maximised.⁶

The LOSC calls upon coastal States to adopt conservation and management measures to promote the optimum utilisation of [tuna] resources in their EEZ.⁷ For this reason, Kenya has a commitment to meet this requirement by developing and managing

⁵ LOSC, Art. 62(1).

⁶ Satish Chand, R Quentin Grafton and Elizabeth Petersen, 'Multilateral Governance of Fisheries: Management and Cooperation in the Western and Central Pacific Tuna Fisheries' (2003) 18 *Marine Resource Economics* 329, 333.

⁷ LOSC, Art. 62 (1).

its tuna resources for optimum utilisation. Kenya is thus obligated to determine its capacity to harvest the [tuna] resources of the EEZ,⁸ and to allow other States access to the surplus of the allowable catch for which it does not have the capacity to harvest, through the conclusion of agreements or other arrangements.⁹ Kenya also has a protective role under the LOSC and is required to regulate the activities of foreign nationals fishing in its EEZ,¹⁰ to ensure that such activities are consistent with its national laws.

Since the LOSC does not define the meaning of optimum utilisation and leaves it to the discretion of the coastal State,¹¹ the implementation of this objective raises a major concern regarding the determination of an optimal level of fishing. Nevertheless, the principle of optimum utilisation of tuna resources in the EEZ offers developing coastal States such as Kenya the opportunity to meet their social, economic and food security objectives.

Dahmani defines optimum utilisation in the literal sense as that utilisation which is 'best or most favourable'.¹² This definition, however, still leaves open the question of what is optimal and what the criteria used to determine such a level might be. Based on this definition, it can be concluded that Kenya may achieve optimum utilisation of its tuna resources if these resources are put to the best use. Hence, the responsibility of determining the best use and optimum level of fishing still rests with Kenya. It is believed that the optimum utilisation requirements of the LOSC are meant 'to ensure that available fishery resources are not hoarded by the coastal State',¹³ with which the wealth of the tuna resources of the EEZ rests.

⁸ LOSC, Art. 62 (2).

⁹ LOSC, Art. 62 (2).

¹⁰ LOSC, Art. 62 (4).

¹¹ Vivian Louis Forbes, *The Maritime Boundaries of the Indian Ocean Region* (1995) 78. <http://books.google.com.au> (accessed 29 August 2009). The explanation given by the US Ambassador J R Stevenson for the real meaning of the objective of optimum utilisation at the Law of the Sea Conference at Caracas in 1974 was that; the principle of full utilisation would enable the coastal State to benefit from renewable resources which might not have been utilised and also help meet the protein requirement of the internal community. The coastal State has the liberty to choose to grant foreign access to its EEZ fisheries resources even if it has the capacity to harvest as it deems fit. See, M Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 48.

¹² M Dahmani, *The Fisheries Regime of the Exclusive Economic Zone* (Martinus Nijhoff Publishers, 1987) 49.

¹³ Lee A Kimball, *International Ocean governance: Using International Law and Organisations to Manage Marine Resources Sustainability* (IUCN, 2003) 27.

Although the optimum level of fishing in the EEZ rests with the coastal State, the LOSC prescribes the limits within which the ‘optimum utilisation’ of [tuna] resources should be undertaken. Such activity is to be undertaken without prejudice to the conservation obligations of the coastal State.¹⁴ Hence, to attain the optimum utilisation of its tuna resources, Kenya is required to take into consideration the determination of the allowable catch,¹⁵ collecting and sharing of data,¹⁶ maintenance of sustained quantities of harvested species and also to consider effects on associated or dependent species.¹⁷ Kenya’s legal and policy responses to the implementation of these conservation and management objectives have been analysed in chapter 6. The following section outlines Kenya’s efforts to utilise the tuna resources in its EEZ.

7.3 National Tuna Fisheries Development Experience in Kenya

The tuna resources in Kenya’s EEZ are targeted primarily by fishing vessels from distant water fishing nations (DWFNs) with no involvement from Kenyan nationals whatsoever.¹⁸ However, one longline vessel has been flagged to Kenya since 2007.¹⁹ Like most developing coastal States which were driven by their aspirations for economic development to claim their rights and jurisdiction over fisheries in their EEZ, Kenya’s domestic capacity to harvest the tuna resources in its EEZ is limited.²⁰ As demonstrated in the previous chapters, Kenya lacks the financial and institutional capability, and the expertise to participate in the tuna fishery. Kenya is therefore dependent upon foreign fishing access to derive financial benefits from the tuna

¹⁴ LOSC, Art. 62(1).

¹⁵ LOSC, Art. 61 (1).

¹⁶ LOSC, Art. 61(5).

¹⁷ LOSC, Art. 61(4).

¹⁸ Nancy Gitonga and Robin Achoki, ‘Fiscal Reforms for Kenya Fisheries’ in Stephen Cunningham and Tim Bostock (eds), *Papers Presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management*, Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

¹⁹ Kenya, *National Reports of Kenya on Tuna Fishery* 2008, 2009 and 2010; See also Edward Kimakwa, *Proceedings of the WWF-AU Expert Consultations on Sustainable Management of Tuna and other Highly Migratory Resources in South West Indian Ocean Coastal States* Nairobi, Kenya 17-18 December 2009.

²⁰ Oceanic Development, Megapesca Lda (2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

resources in its EEZ. Foreign access to Kenya's tuna resources has been regulated through direct licensing since 1996 to date.²¹

As earlier demonstrated in chapter 4, fisheries is a minor component of Kenya's economy and domestic tuna landings are minimal. However, the resource in Kenya's EEZ is potentially significant, with DWFNs catching upto an estimated 60,000 tonnes annually as the seasonal migration passes through the Kenyan EEZ.²² Hence, the domestic industry development in Kenya is very limited, with only a single tuna processing plant in operation. The only catch landed in Kenya is wholly utilised in the shore-based investment of the tuna processing industry. The rest of the catch from DWFNs operating in Kenya's EEZ is landed directly to foreign States.²³ As the domestic landings of tuna in Kenya are minimal, the tuna processing industry remains a minor activity with its operation fully dependant on fish imports from DWFNs operating in its EEZ.²⁴

The tuna landed in Kenya is processed into loins (fillets) by the Wananchi Marine Products Company based in Mombasa.²⁵ The company also produces tuna flakes for the domestic market.²⁶ The quantity of tuna loins produced for export is about 10,000mt, while at least an additional 15,000mt of tuna are landed by foreign fleets and transhipped from the same company annually.²⁷ Tuna loins are relatively minor compared to the other products of the tuna industry such as canned or fresh tuna. Tuna processing by Wananchi Marine Products was initiated in 1996 with modest exports of

²¹ MRAG, *Control of Foreign Fisheries*, Workshop Report Dar es Salaam 14-15 November 2005.

²² Oceanic Development, Megapesca Lda(2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements* (2007).

²³ Nancy Gitonga and Robin Achoki, 'Fiscal Reforms for Kenya Fisheries' in Stephen Cunningham and Tim Bostock (eds), *Papers Presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management*, Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

²⁴ Oceanic Development, Megapesca Lda(2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

²⁵ Wananchi Marine Products is a subsidiary of the United States based Tri Marine, which is one of the largest global tuna supply companies in the world. The company owns fishing fleets and processing companies worldwide, supplying tuna from the Pacific, Atlantic and the Indian Ocean.

²⁶ S M Mwikya, *Kenya's Marine Fishery: Development Potential under an Economic Partnership Agreement with the EU*, Technical Report for the Ministry of Trade, Government of Kenya (2005).

²⁷ Ibid.

500-1000 tonnes to Italy and increased to 9,000 tonnes in exports to the EU in general by 2005.²⁸ This amount represented 12% of the EU import market of pre-cooked tuna loins, most of which were made up of yellowfin tuna and exported to Italy.²⁹ The company has an annual turnover of €30million.³⁰

Tuna processing in Kenya is constrained by a range of factors, particularly, the lack of infrastructure such as fish ports and cold storage facilities for fish preservation.³¹ Wananchi Marine Products have leased a government owned purse seine docking facility where landings of tuna are received from DWFN vessels. However, the company is constrained by its limited cold storage capacity. As a result, Wananchi Marine Products has to contend with the seasonal nature of the tuna fishery. Hence, the company faces high prices or shortages of tuna when the EU fleet is operating distantly.³² This creates a variable supply of Kenya's pre-cooked tuna loins to export markets, which in turn causes a fluctuation in the income from such exports.

For example, in 2006 Kenya's exports amounted to 6.963MT at an average export price of US\$ 4.562 per MT compared to 7.893 MT in 2007 at US\$5.67 per MT. This variation represented a 13% increase and placed Kenya in the fourth position as a major supplier of pre-cooked tuna loins to the EU after Ecuador, El Salvador and Thailand.³³ Such fluctuations may have a detrimental effect on the company's ability to conduct its operations. The effective operations of Wananchi Marine Products require a regular supply of tuna which is also fundamental to the development of Kenya's tuna industry.

²⁸ Oceanic Development, Megapesca Lda(2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

²⁹ Some of the tuna loins are exported to France. See <http://www.atuned.biz/public/ViewArticle.asp?> (accessed 20 December 2010).

³⁰ Oceanic Development, Megapesca Lda(2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

³¹ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

³² Oceanic Development, Megapesca Lda(2007). Report on *Evaluations, Impact Analyses and Monitoring Services in the Context of FPAs: Establishment of a Framework Contract Management Unit (FCMU) to Manage, Monitor and Coordinate the Activities under the Framework Contract and the Relevant Specific Agreements*.

³³ See <http://www.atuned.biz/public/ViewArticle.asp?ID=5764> (accessed 30 March 2009).

Although minimal, Kenya realises benefits to its national economy as a result of the revenue accruing from licensing foreign fishing vessels harvesting tuna in its EEZ. Kenya's national economy also benefits from the foreign exchange accruing from the export of tuna loins to the European Union (EU). The current participation of foreign fishing vessels in Kenya's tuna fishery and the focus of its fisheries development policies in recent times is an indication of Kenya's aspiration to develop its tuna resources and to realise significant economic benefits from them.³⁴ However, despite the abundance of tuna resources in Kenya's EEZ, their potential benefits are not being fully realised.³⁵ The challenge for Kenya is how to assert and exercise its sovereign rights in the EEZ, to utilise the tuna resources optimally and sustainably, in order to realise long-term benefits to the national economy. Hence, options for the sustainable utilisation of tuna resources within Kenya's jurisdiction are examined in the following sections.

Most developing coastal States have pursued two main types of arrangements directed towards the development of the tuna resources under their jurisdiction, namely domestic tuna industry development and fisheries access agreements. As coastal States have the responsibility to ensure that such fish stocks are utilised sustainably, they need to take steps to ensure the enactment of appropriate legislation and to adopt adequate policies in this regard. The following section examines the issues associated with domestic development of the tuna industry and draws on the experiences of some Pacific Island States to illustrate the key elements that may be of value to Kenya. The States examined include Kiribati, Fiji and Papua New Guinea. The experience of the Pacific Island States provides an overview of their domestic tuna industry development efforts and also underscores the lessons learned from such experiences. Some of the aspects reflected in these experiences include the regional and national strategies adopted by these States for the development of domestic tuna industries, fisheries policy aims and objectives, investment approaches, and also the challenges encountered in these processes.

³⁴ As demonstrated in Chapter 4(4.5.4.1 and 4.5.4.2), Kenya's recent national development strategies and fisheries specific plans acknowledge the potential for tuna fisheries to contribute to Kenya's economy and for food security.

³⁵ Nancy Gitonga, 'Approaches to Achieving Seafood Safety in East Africa' in, David James, Lahsen Abababuo and Sally Washington, *Sixth World Congress on Seafood Safety, Quality and Trade* 14-16 September 2005 Sydney, Australia (FAO, 2007) 113.

7.4 Domestic Tuna Industry Development

Coastal States aspire to develop domestic tuna industries so as to maximise the benefits from the exploitation of their tuna stocks. The process of developing tuna fisheries and processing industries is often referred to as ‘domestication’.³⁶ For the purposes of this thesis, the definition of domestication is derived from Parris and Grafton. Thus, domestication is defined as the process of developing and/or then integrating domestically located harvesting and processing sectors to serve export markets.³⁷ Other aspects of domestication include ownership, management and employment in fisheries industries by nationals of a coastal State, turnover cycling through the domestic economy, and re-investing of profits locally.³⁸

It is believed that by building their capacities to harvest tuna stocks from their own EEZs using domestic fleets, developing coastal and island States could realise increased economic and socio-economic benefits from tuna fisheries.³⁹ Generally, by developing local tuna industries, it is envisaged that States do not only realise a larger share of the value accruing from the tuna stocks but that they have greater control over such resources. Coastal States have thus tended to promote domestic participation in their tuna fisheries for various reasons, such as broadening of their economic base; generating employment opportunities, foreign exchange, and government revenue; and to facilitate the transfer of fishing and related technology to their nationals.⁴⁰

³⁶ Kate Barclay, *History of Industrial Tuna Fishing in the Pacific Islands: A HMAP Asia Project Paper*, Working Paper no. 169 (2010).

³⁷ Hannah Parris and R Quentin Grafton, *Tuna-Led Sustainable Development in the Pacific*, Australian National University Economics Working Paper EEN0507 (2005) 6.

³⁸ Kate Barclay, *History of Industrial Tuna Fishing in the Pacific Islands: A HMAP Asia Project Paper*, Working Paper no. 169 (2010).

³⁹ Stephen Mbithi Mwikya, *Fisheries Access Agreements: Trade and Development Issues*, ICTSD Natural Resources, International Trade and Sustainable Development Series Issue Paper No. 2 (International Centre for Trade and Sustainable Development, 2006) 2.

⁴⁰ Michael Pretes and Elizabeth Petersen, *Rethinking Fisheries Policy in the Pacific*, Resource Management in Asia-Pacific, Working Paper No. 39, Research School for Pacific and Asian Studies, Australian National University (Resource Management in Asia-Pacific Programme, 2002). Island States could promote domestic participation by establishing a domestic fleet, or transshipment facilities, and by investing in the processing sector.

7.4.1 The Experiences of the Pacific Island States in Domestic Tuna Industry Development

As a result of their aspirations to maximise the economic contributions from their tuna resources, some of the Pacific Island States have pursued domestic industry development of the tuna fisheries within their jurisdiction. In this regard, the Pacific Island States have formulated and are implementing national strategies directed towards the achievement of their domestication objectives. Further, through cooperative initiatives, the Pacific Island States have adopted regional strategies committed to the development of domestic tuna industries.⁴¹

These Pacific Island States adopted a strategy encouraging domestication in the 1990s. The inspiration for such a policy derived from various issues like anti-colonial feelings, the need for local employment, and from a feeling of dissatisfaction in dealing with DWFNs which were believed to have out-manoeuvred the Pacific Island States in access fee negotiations.⁴² Thus the development of domestic tuna industries has been and continues to be central to the fisheries development aspirations of the Pacific Island States.⁴³ For this reason, this thesis draws on the experience of the Pacific Island States

⁴¹ Vina Ram- Bidesi and Martin Tsamenyi, 'Implications of the Tuna Management Regime for Domestic Industry Development in the Pacific Island States' (2004) 28 *Marine Policy* 383,383. Such strategies include Federated States of Micronesia Arrangement for Regional Fisheries Access, which gives multilateral fisheries access across the combined EEZs to purse seines that meet the criteria for 'locally based' at discounted fishing licenses; the Palau Arrangement for the management of the purse seine fishery; The Secretariat for the Pacific Community (SPC) for statistical data collection and providing technical advice for fisheries management purposes; The Pacific Islands Forum Fisheries Agency (FFA) for strengthening regional solidarity; and the Nauru Agreement which dictates minimum and uniform terms of access for foreign vessels (prioritizes domestic over foreign vessels). See also Elizabeth Havice, 'The Structure of Tuna Access Agreements in the Western and Central Pacific Ocean: Lessons for Vessel Day Scheme Planning' (2010) 34 *Marine Policy* 979, 980. A critical analysis of the regional strategies adopted by the Pacific Island States is far beyond the scope of the present thesis. However, selective comments will be made where appropriate.

⁴² R A Schurman, 'Tuna Dreams: Resource Nationalisation and the Pacific Islands' Tuna Industry' (1998) 29(1) *Development and Change* 107, 115.

⁴³ M Sheppard and L Clark, *South Pacific Fisheries Development Needs*, United Nations Development Programme and the Food and Agriculture Organisation of the United Nations (1984). A study by a Deputy Director of the Forum Fisheries Agency in the 1980s concluded that; "development of locally-based tuna industries is a priority objective of most Pacific Island Nations". Additionally, in the communiqué issued from the thirty-eighth Pacific Islands Forum held in Tonga from 16-17 October 2007 attended by heads of State and governments of the Cook Islands, Federated States of Micronesia, Fiji, Nauru, New Zealand, Niue, Papua New Guinea, Samoa, Tonga, Tuvalu and Vanuatu, and representatives of Australia, Kiribati, Palau, the Republic of Marshall Islands and Solomon Islands it was stated that; "We the leaders of the Pacific Islands Forum.... Hereby reaffirm the importance of fisheries to the economies of all Pacific forum countries, and commit ourselves to promoting domestic fisheries, in particular the development of national tuna industries..."...recognising the aspirations of Pacific Island countries to strengthen their engagement in sustainable fisheries and to maximise the flow on benefits from both domestic fisheries and foreign fishing operations in the region;...". See, Anonymous, The Vava'u Declaration on Pacific Fisheries Resources "Our Fish, Our Future"; See also Robert Gillet, Garry

to illustrate various elements of domestic tuna industry development in order to provide lessons for Kenya. The domestication experiences of the Pacific Island States may not necessarily be readily applicable to Kenya. However, they may offer potentially valuable lessons for Kenya.

Under the domestication policy, the Pacific Island States have directed financial investments towards several fishing activities including purchasing of fishing vessels, port infrastructure, and transshipment bases.⁴⁴ Another strategy that some Pacific Island States have adopted is to make industry development a condition of the licensing arrangements for DWFNs. Under such licensing arrangements, DWFNs are required to utilise domestic infrastructure and/or nationals to crew boats.⁴⁵ The components that are central to the domestic development strategies of the Island States include; subsidies to domestic industry, incentives for foreign investors, and bilateral and multilateral aid.⁴⁶ The following discussion highlights the strategies that have been formulated by some of the Pacific Island States for the domestication of their tuna industries.

7.4.1.1 The Case of Kiribati

Kiribati is one of the Pacific Island States with a vast EEZ comprising some of the richest skipjack fishing areas in the region. The policy framework of Kiribati demonstrates its commitment to develop a domestic tuna industry since achieving independence in 1979.⁴⁷ As such, the domestication aspirations of Kiribati are reflected in its national development plans and also in its tuna development and management plans. For example, an aim of its tuna development and management plan of 2003 is to: “reduce and replace foreign fishing access with Kiribati owned and operated vessels”.⁴⁸

Preston and Hugh Walton, *Development of Tuna Fisheries in the Pacific ACP Countries* (DevFish), Mid Term Review February 2008.

⁴⁴ Michael Pretes and Elizabeth Petersen, *Rethinking Fisheries Policy in the Pacific*, Resource Management in Asia-Pacific, Working Paper No. 39, Research School for Pacific and Asian Studies, Australian National University (Resource Management in Asia-Pacific Programme, 2002); Elizabeth H. Petersen, ‘Economic Policy, Institutions and Fisheries Development in the Pacific’ (2002) 26 *Marine Policy* 315, 318.

⁴⁵ Hannah Parris and R Quentin Grafton, *Tuna-Led Sustainable Development in the Pacific*, Australian National University Economics Working Paper EEN0507 (2005) 15.

⁴⁶ Liam Campling, Elizabeth Havice and Vina-Ram Bidesi, *Pacific Island Countries, the Global Tuna Industry and the International Trade Regime- A Guidebook* (2007).

⁴⁷ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006)138.

⁴⁸ Tuna Development and Management Plan for Kiribati, 2003.

In order to achieve its domestic aspirations, Kiribati has made an effort to promote the implementation of various strategies including the establishment of processing plants, transshipment, and service industries. The Kiribati nationals have also been trained and recruited to work on foreign fishing fleets.⁴⁹

Domestic development of the tuna industry in Kiribati was initiated in 1979 through the government owned enterprise, Te Mautari Limited which operated a pole and line fishing fleet.⁵⁰ The achievements of Te Mautari Limited include the establishment of cold storage facilities, a training centre and longline development. Its growth was fostered by proximity to rich tuna fishing grounds, the experience and tradition of local fishermen, and the commitment of government.⁵¹ However, the Te Mautari Limited fishing fleet diminished in the early 2000s leading to the company's collapse.⁵²

A number of factors contributed to the failure of Te Mautari Limited. First, its operations were constrained by fluctuations in tuna catches.⁵³ Secondly, the operational costs and the maintenance of fishing vessels were very high and the management poor.⁵⁴ Thirdly, there was a shortage of skilled labour. Lastly, the market prices of tuna products were very competitive.⁵⁵ Despite external funding and technical assistance, the operation of the government owned company Te Mautari Limited was not profitable

⁴⁹ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 75.

⁵⁰ Ibid 138. Although other initiatives have since followed TML, this thesis limits its examples for domestic development experience of Kiribati to Te Mautari Limited .

⁵¹ Republic of Kiribati, 'Sixth National Development Plan (1987-1991)' in Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD Thesis, University of Wollongong, 2003.

⁵² Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 138.

⁵³ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD Thesis, University of Wollongong, 2003.

⁵⁴ Ibid.

⁵⁵ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 72.

and it finally collapsed.⁵⁶ Subsequently, all government-owned fisheries in Kiribati companies were consolidated to form the Central Pacific Producers.⁵⁷

Based on the experience of Te Mautari Limited operations, the development focus in Kiribati shifted slightly in the 1990s from the emphasis on national fishing operations to restructuring of public enterprises and reforms to create an enabling environment to stimulate growth and to promote private sector development. Thus, foreign investment became a major focus together with the improvement of infrastructure and the establishment of joint ventures with foreign companies, particularly in the purse seine fishery.⁵⁸ (Joint ventures are discussed in a subsequent section of this chapter). Another strategy that has been adopted for the development of domestic tuna industries in Kiribati is licensing of foreign vessels under access agreements.⁵⁹ Through such agreements, foreign vessels are required or encouraged to utilise local ports for transshipment and other shore based facilities thus providing spin-off benefits.⁶⁰ By employing locals on foreign vessels, skills have been developed for establishing domestic fishing operations and income provided to local economies.⁶¹

The domestic development in Kiribati has been subject to various constraints. First, the low level of economic development has been prohibitive to fisheries development due to lack of institutions and infrastructure for business development. Secondly, the geographic isolation and therefore the distance from major trade routes make the airfreight very expensive.⁶² Third, shortages of land and the tenure systems make it difficult and expensive to negotiate use rights for land.⁶³ Fourth, there are shortages of fresh water and electricity which are major requirements for fisheries

⁵⁶ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD Thesis, University of Wollongong, 2003.

⁵⁷ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 72.

⁵⁸ Kiribati, Public Service Office, *Public Service Reform in Kiribati* (2001). A Report Presented by the National Centre for Development Studies at the Australian National University and the University of the South Pacific, Kiribati Center.

⁵⁹ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD Thesis, University of Wollongong, 2003.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Ibid. Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 72.

⁶³ Ibid.

development.⁶⁴ Fifth, the lack of various trades,⁶⁵ and technical skills required to operate fishing vessels effectively, and inappropriate transfer of knowledge and technology by DWFNs which also provided foreign aid.⁶⁶ These challenges limit the incentives to attract the private sector and foreign investment,⁶⁷ and have rendered shore-based developments very expensive making it difficult for Kiribati to achieve its domestication aspirations.⁶⁸

7.4.1.2 The Case of Fiji

A second example of domestication is drawn from the experience of Fiji. Fiji's EEZ is one of the least endowed in the region. Nonetheless, Fiji's fisheries development policy and strategies reflect its efforts of domestication and indigenization of its tuna fisheries.⁶⁹ The ultimate aim of such policies is for Fiji to create employment for its nationals and earn foreign exchange from fish exports.⁷⁰ As part of its domestication efforts, the Fijian government has maintained a policy requiring foreign vessels to land fish locally or to fish under charter, lease arrangements or joint ventures with domestic companies.⁷¹

Thus, foreign fishing vessels have to be licensed and registered and flagged in Fiji, while fishing companies operating in Fiji are to be at least 30% owned by Fijian

⁶⁴ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 71.

⁶⁵ Lindsay Chapman, *Development Options and Constraints Including Training Needs and Infrastructure Requirements Within the Tuna Fishing Industry and Support Services on Tarawa and Christmas Islands, Republic of Kiribati*. Field Report No.19 Noumea, New Caledonia: Secretariat of the South Pacific Community (SPC).

⁶⁶ Ribwanataake Awira, *The Domestic Tuna Fisheries of Kiribati*. A National Report Presented during the Meeting of the Standing Committee on Tuna and Billfish held in Majuro, Marshall Islands 9-18 August 2004.

⁶⁷ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD Thesis, University of Wollongong, 2003.

⁶⁸ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries-Country Profiles* (Asia Pacific Press, 2006) 71.

⁶⁹ Fiji's National Tuna Management Plan for example, gives priority for licenses to local individuals or companies, and indigenous Fijians. The plan also gives priority for licenses to Fiji flagged vessels, Fijian owned vessels and vessels with Fijian crew. See Government of Fiji, *Fiji-Tuna Development and Management Plan. A National Policy for the Development and Management of Tuna Fisheries* (2002), Sections 6.3 and 6.8.4.; Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 49.

⁷⁰ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD thesis, University of Wollongong, 2003.

⁷¹ Ibid.

citizens.⁷² Such an arrangement is considered strategic as it enables the government to maintain control over foreign owned vessels. It also enables Fiji to establish a significant catch history in its zone and the adjacent high sea and from the onshore landings for processing, an aspect which is fundamental to the level of allocation of Fiji's total allowable catch in the region.⁷³

One of Fiji's earlier domestication initiatives was the establishment of a government-owned cannery under the Pacific Fishing Company (PAFCO) which was first initiated in 1964.⁷⁴ The company has contributed immensely to Fiji's economy in terms of foreign exchange and also to the local economy.⁷⁵ However, several difficulties have been encountered in the course of its development. Although PAFCO was strategically located near rich fishing grounds with preferential market access to the EU, and had a good water supply and a skilled, trained workforce, it incurred high operational costs, lacked capital and suffered shortages of fish.⁷⁶ In an effort to maintain the operations of PAFCO, its US based partner, Bumble Bee provided a financial input of US\$20 million in 2009.⁷⁷

Another domestication initiative in Fiji is the fresh tuna longline fisheries. The domestic development of Fiji's fresh tuna longline industry has successfully been facilitated by the private sector through joint ventures, contracts and agreements between foreign operators and domestic interests.⁷⁸ These developments have been supported by Fiji's infrastructure such as reliable airfreight and its capitalist economy.⁷⁹ In addition, by providing tax and duty concessions, the Fijian government has

⁷² Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 49.

⁷³ Ibid.

⁷⁴ Joeli Veitayaki, *Fisheries Development in Fiji: The Quest for Sustainability* (The University of the South Pacific, 1995) 56.

⁷⁵ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD Thesis, University of Wollongong, 2003.

⁷⁶ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 45.

⁷⁷ Fiji-US\$20mln Investment, <http://tunaseiners.com/blog/2009/11/fiji-us20mln-investment-to-lift-pafco-production/> (accessed 27 December 2010).

⁷⁸ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 56; Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD thesis, University of Wollongong, 2003.

⁷⁹ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 56.

encouraged private sector development and foreign investment through supporting government policies.⁸⁰

7.4.1.3 The Case of Papua New Guinea

A third example of domestication in the Western and Central Pacific Ocean (WCPO) region is taken from Papua New Guinea, which is the largest State, in size and population. Papua New Guinea's EEZ has some of the richest purse seine fishing grounds with the highest annual catch in the WCPO region. Its longline fishery is also potentially productive. Through a process of policy reform which was initiated in 1995, Papua New Guinea has progressively improved its business environment and enhanced private sector development. As a result, Papua New Guinea has experienced significant growth in its domestic tuna industries and a domestic tuna longline industry has since been developed.⁸¹

The growth of the longline industry in Papua New Guinea has been facilitated by the introduction of a duty waiver on tuna exports and the development of a national tuna management plan for the longline fishery. The tuna longline industry was reserved for the citizens of PNG and local companies through a change in policy which permitted a minority (49% maximum) foreign shareholding.⁸² The facilities owned by the longline companies included sashimi packing, fresh tuna loining, and a cold storage facility at Port Moresby airport which facilitated storage of fish ready for export.⁸³

Papua New Guinea is also one of the States that have adopted a strategy where foreign owned purse seine companies which have been encouraged to base their fleets in locally, have established processing facilities in the State since the mid 1990s. As a result, the Papua New Guinea based purse seine fleet which grew from two vessels before 1994 to 40 vessels in 2006,⁸⁴ accounts for most of the total increase in purse

⁸⁰ Vina Ram-Bidesi, *Domestication of the Tuna Industry in the Pacific Islands: An Analysis of National and Regional Strategies*, PhD thesis, University of Wollongong, 2003. The Foreign Investments Act has facilitated the flow of foreign investment in Fiji.

⁸¹ Robert Gillet, *Domestic Tuna Industry Development in the Pacific Islands: The Current Situation and Considerations for Future Development Assistance*. Forum Fisheries Agency Report 03/01 (FFA, 2003).

⁸² Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 138.

⁸³ Ibid 139.

⁸⁴ A T Lawson (ed), *Tuna Fishery Yearbook* (Western and Central Pacific Commission, 2007). <http://www.spc.int/oceanfish/Docs/Statistics/TYB.htm> (accessed 23 December 2010).

seines operating in the region from 147 in 1995 to 175 in 2006.⁸⁵ Papua New Guinea's aspirations to develop domestic processing industries are very ambitious as it hopes to replace Thailand as the world's centre for tuna processing.⁸⁶ It suffices to note that aside from its strategic position, Thailand's dominance in the world tuna industry lies with its government policies which support industry objectives.⁸⁷

Under the arrangement of basing foreign-owned vessels domestically, the beneficial ownership may rest with the Pacific Island State but the legal ownership remains foreign, in which case the flag State responsibility lies with the owner of the fishing vessel.⁸⁸ Although this arrangement is beneficial to Papua New Guinea, it places enforcement and monitoring responsibility upon the State in respect of such vessels. Even so, Papua New Guinea needs to ensure that the agreements entered into with foreign owned vessels are explicit regarding flag State responsibility in order for the owners of such vessels to be fully aware of their management responsibilities.⁸⁹

The initial development of tuna industries in Papua New Guinea has been supported by the government policies which have been formulated as a result of improved governance. However, administrative improvements need to be made across all sectors for governance to be effectively enhanced. As such, the development aspirations of Papua New Guinea have been constrained by the incapacity of the government to improve the business environment and also by the political interference which has caused uncertainty in governance.⁹⁰ In summary, despite the considerable efforts of the PICS to develop domestic tuna fishing and processing, domestic tuna

⁸⁵ A Langley, P Williams and J Hampton, 'The Western and Central Pacific Tuna Fishery: 2006 Overview and Status of Stocks' in Kate Barclay, *History of Industrial Tuna Fishing in the Pacific Islands: A HMAP Asia Project Paper*, Working Paper no. 169 (2010).

⁸⁶ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 52.

⁸⁷ Liam Campling, Elizabeth Havice and Vina-Ram-Bidesi, *Pacific Islands Countries, the Global Tuna Industry and International Trade Regime- A Guidebook* (FFA, 2007). Thailand is the largest most aggressive producer of canned tuna. This is based on its strategic position enabling processors to secure year-round supply and stable government structure which promoted infrastructure development and strategic industrial and trade policies.

⁸⁸ Vina-Ram Bidesi and Martin Tsamenyi, 'Implications of the Tuna Management Regime for Domestic Industry Development in the Pacific Island States' (2004) 28 *Marine Policy* 383, 390.

⁸⁹ Vina-Ram Bidesi and Martin Tsamenyi, 'Implications of the Tuna Management Regime for Domestic Industry Development in the Pacific Island States' (2004) 28, *Marine Policy* 383, 390.

⁹⁰ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 153.

industries account for less than 30% of the value of tuna harvested in the region's EEZ and a much smaller proportion of high seas catches.⁹¹

7.4.2. The Viability of Domestic Tuna Industry Development in Kenya

The tuna industry domestication experiences of the Pacific Island States above identified some elements pertinent to the effective development of a national tuna industry. Based on the experience of these States, it is evident that Kenya is generally faced with a number challenges which may constrain the development of a domestic tuna industry. These challenges relate to fisheries legislation and policy, capital constraints, expertise and an enabling business environment.

7.4.2.1 Fisheries Policy and Legislation

The effectiveness of any efforts to develop a national tuna industry requires policy direction. This calls for an appropriate legal framework and a sectoral and national policy framework governing fisheries management and development. Not only should such a framework enable Kenya to generate wealth from its tuna resources but it also needs to ensure the sustainability of Kenya's tuna resources. As demonstrated in chapter 5(5.3), the development of Kenya's tuna industry requires policy support. However, Kenya's fisheries law has no provisions designed to establish specific management strategies for the individual fisheries. The profile of fisheries, particularly marine, is also low in Kenya's economy.⁹² This creates difficulties for developing a management and development plan specifically for tuna.

Kenya needs to establish a comprehensive framework for the management and long-term development and sustainability of a tuna industry. A tuna management and development plan would provide guidelines for the development and investment in the tuna industry and would also give effect to the management objectives for tuna set in the fisheries laws. The development of the tuna industry and management of tuna fisheries in Fiji for example, has been articulated in its tuna management and development plan. Fiji's plan sets out the management objectives and addresses, *inter*

⁹¹ M Batty and L Rodwell, 'Overview of Fisheries Development Issues and Challenges' in Amanda Hamilton and Mike Batty, *Constraints to Tuna Fisheries Development in the Pacific*. A Paper prepared for Presentation to the Tonga National Commercial Fisheries Conference 7-9 February, 2007. <http://www.tongafish.gov.to/> (accessed 22 January 2011).

⁹² Colin Barnes, *Business Plan for a National Fisheries Development Institution in Kenya* (2005).

alia, economic expectations (such as employment, export earnings and government revenue) and sustainability (compliance with international agreements) issues.⁹³

7.4.2.2 Limited Access to Investment Capital

The development of a domestic tuna industry requires large capital investments. The start up costs for a fishing operation is substantial. Such an operation will require equipment such as fishing vessels (purchasing or leasing) and related gears, personnel and other operational costs. The financial inputs are prohibitive to private individuals and the business risky. The government of Kenya is also not in a position to provide the finances for investment in a domestic tuna industry. Furthermore, it has been pointed out previously that State-owned enterprises have not been successful in the development of the tuna industry, and that the private sector is considered instrumental in providing the development needs of the tuna industry.

Hence, it becomes necessary for Kenya to facilitate the engagement of the private sector in the development of the tuna industry. Besides being a reliable source of financing through capital investment, the private sector plays a significant role in the areas of trade, marketing and financial management.⁹⁴ Kenya will also need to promote foreign investment through appropriate policies. The Kenyan government has a major role in creating an enabling business environment conducive to the participation of the private sector and to attract foreign investment.

7.4.2.3 Enabling Business Environment

The development of the tuna industry involves the participation of various government sectors including, *inter alia*, fisheries, transport, finance and economic planning, and foreign affairs, involving several line ministries. There is a need for effective government coordination across the relevant ministries to ensure understanding of Kenya's tuna development objectives. The various government ministries provide the vital network necessary for supporting the development of the tuna industry in areas such as taxation, transport, and immigration. Such support is

⁹³ Republic of Fiji, Tuna Management and Development Plan (2006-2010).

⁹⁴ The private sector is recognised as an engine of growth by financial institutions like the Asian Development Bank. The private sector can use resources more efficiently than the public sector and create job opportunities. See Asian Development Bank, *Private Sector Development Strategy* (ADB, 2000) 2.

fundamental to the creation of an enabling business environment. In Kenya, the coordination between the Ministry of Fisheries Development and other agencies concerned in the fisheries sub-sector is inadequate.⁹⁵ This creates an institutional barrier to proper planning for strategies directed towards the development of the tuna industry. Government coordination is a key area of focus for the Kenyan Ministry of Fisheries Development, in its efforts to revitalize the fisheries sub-sector.

Kenya has formulated the *Strategic Fisheries Plan* (2006-2011) and the *Private Sector Development Strategy* (2006-2010) which promote private sector investment. These strategies are aimed at meeting the medium term objectives outlined in the *Economic Recovery Strategy for Wealth and Employment Creation* policy.⁹⁶ Although the objectives of these strategies have not yet been met,⁹⁷ they can provide significant leverage for private sector development within Kenya's fisheries sector, particularly for tuna through enhanced cooperation across sectors.

The other enabling factors necessary for the development of the tuna industry can be broadly described as supportive quality government services. Such services include infrastructure such as efficient ports and transport, onshore facilities, freight networks, water supply, and electricity, most of which are inadequate.⁹⁸ Kenya also lacks a skilled and experienced human resource base required for the development of the tuna industry.⁹⁹ Also lacking is good knowledge of the dynamics of the tuna industry including at the global level. Kenya will need to address these issues if domestic tuna industry development is to be considered as an option.

7.4.2.4 Lessons Learned From the Experience of the Pacific

The main lesson to be learned from the experience of the Pacific Island States is that, domestic development of the tuna industry is particularly challenging for developing coastal States, and that such development takes time. Overall, the domestic

⁹⁵ Ministry of Fisheries Development, <http://www.fisheries.go.ke/> (accessed 25 January 2011).

⁹⁶ Republic of Kenya, *Private Sector Development Strategy (PSDS) for Kenya*. <http://www.psds.go.ke/> (accessed 9 December 2010).

⁹⁷ Ministry of Fisheries Development <http://www.fisheries.go.ke/> (accessed 25 January 2011).

⁹⁸ Nancy Gitonga and Robin Achoki, 'Fiscal Reforms for Kenya Fisheries' in Stephen Cunningham and Tim Bostock (eds), *Papers Presented at the Workshop and Exchange of Views on Fiscal Reforms for Fisheries- to Promote Growth, Poverty Eradication and Sustainable Management*, Rome 13-15 October 2003, FAO Fisheries Report No. 732 (FAO, 2004).

⁹⁹ Ibid.

tuna industry development requires various enabling factors such as good governance, adequate investment capital, raw materials, skilled labour, equipment, infrastructure, and ready markets. Although the situation of the Pacific Island States may be deemed unique because of their size and geographical challenges, the basic principles that apply to the domestic development of the tuna industry may be applicable to other coastal States.

A number of factors can be identified from the experience of the Pacific Island States as being fundamental for the creation of a foundation for domestic tuna industry development. First, it is shown that the domestic development aspirations of the Pacific Island States have been accorded recognition in the relevant national policy documents. Their domestication objectives are also clearly stated in national development plans and/or national tuna management and development plans. The implementation strategies directed towards such objectives are also stated and documented. This underscores the importance of assigning a high priority to the development of appropriate policies and strategies.

Second, domestic investments in the tuna industry need to be supported by adequate infrastructure. These include port facilities (e.g. wharf, seaport, and slipway), land, supply of water and electricity, transport (air, sea and land), fuel, and skilled labour (skippers, engineers, seamen, and business and fisheries managers). There is also a need for suitable fishing equipment including vessels, and development of onshore infrastructure such as processing facilities for value addition and for general fish handling. The processing facilities may include cold storage facilities, canneries, loining plants and workshops.

The third lesson concerns government- owned tuna fishing companies. Contrary to the assumptions of commentators in the WCPO region that domestication of the region's tuna industry would yield greater economic benefits than those received through a policy of maximising access fees, several reports including those by the Asian Development Bank (ADB),¹⁰⁰ point out that most of the fisheries investments in the domestic industry have failed financially, particularly those investments that have been

¹⁰⁰ ADB is an international development finance institution whose mission is to help its developing member countries reduce poverty and improve the quality of life of their people. See <http://www.adb.org/> (accessed 2nd December 2010).

supported and owned by the government and which are in the majority.¹⁰¹ Various authors have highlighted the weaknesses of the government-owned tuna companies in the WCPO, and pointed out that they are hardly ever successful.¹⁰² “The general consensus in the region is that the government is very poor at running large and complex fishing operations”.¹⁰³

The learning process has been a long and expensive one for the Pacific Island States. The government of the Federated States of Micronesia for example, had invested over US\$120 million by 1995 through State owned enterprises. These enterprises have been unsuccessful.¹⁰⁴ Other such enterprises that have been unsuccessful include joint ventures between the Marshalls Islands and the United States; Solomon Islands and Japan;¹⁰⁵ and a state-owned fishing enterprise in Kiribati.¹⁰⁶ Private investments have been more promising in the tuna industry. Some of the successful ones have been established in Fiji, the Cook Islands, and Tonga.¹⁰⁷ Barclay contends that, domestication should be wholly private-sector driven and independent of financial inputs from government.¹⁰⁸

The failures of the public investment companies in the Pacific are attributed to various factors such as the economics of the global fishing industry,¹⁰⁹ and large upfront

¹⁰¹ Asian Development Bank (ADB), *The Pacific's Tuna: Challenge of Investing in Growth* (ADB Manila, 1997). See also, Elizabeth Petersen 'Economic Policy, Institutions and Fisheries Development in the Pacific' (2002) 26(5) *Marine Policy* 315, 324; Elizabeth H Petersen, *Institutional Economics and Fisheries Management: The Case of Pacific Tuna* (Edward Elgar Publishing, 2005); G Van Santen and P Muller, *Working Apart or Together: The Case for a Common Approach to Management of the Tuna resources in Exclusive Economic Zones of Pacific Island Countries*, A Report Prepared for the Papua New Guinea and Pacific Islands Country Management Unit (The World Bank, 2000).

¹⁰² Robert Gillet, *A Short History of Industrial Fishing in the Pacific Islands* (FAO, 2007) vii; Robert Gillet, Domestic Tuna Industry Development in the Pacific Islands: The Current Situation and Considerations for Future Development Assistance. Report 03/01, Forum Fisheries Agency (FFA, 2003); Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Country Profiles* (Asia Pacific Press, 2006) 22.

¹⁰³ Robert Gillet, *A Short History of Industrial Fishing in the Pacific Islands* (FAO, 2007) vii

¹⁰⁴ Michael Pretes and Elizabeth Petersen, *Rethinking Fisheries Policy in the Pacific*, Resource Management in Asia-Pacific, Working Paper No. 39, Research School for Pacific and Asian Studies, Australian National University (Resource Management in Asia-Pacific Programme, 2002).

¹⁰⁵ R Duncan, S Cuthbertson and M Bosworth, *Pursuing Economic Reform in the Pacific* (ADB, 1999).

¹⁰⁶ SPC, *Report of the Fourteenth Meeting of the Standing Committee on Billfish and Tuna* (SPC, 2002).

¹⁰⁷ ADB, *The Pacific's Tuna: Challenge of Investing in Growth* (ADB, 1997).

¹⁰⁸ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 22.

¹⁰⁹ The Pacific Island States are most likely to develop the least profitable sub-sectors such as harvesting and canning as opposed to retailing and distribution which are controlled by buying nations such as Japan,

costs and substantial technical requirements that reduce potential financial gains.^{110, 111} Additionally, the cost of patrolling the EEZs of the Island States has become more prohibitive as a result of increased domestication. Generally, the cost associated with fisheries management is quite substantial and in some States it may even exceed the potential benefits from the fisheries.¹¹²

The fourth lesson concerns the participation of the private sector in the domestic development of the tuna industry. This is necessitated by the need for significant capital investments and efficiency. The active participation of the private sector requires a stable and enabling investment environment that is able to create the appropriate conditions. Based on the above discussions, it is evident that the private sector can be very instrumental in facilitating tuna industry development. Barclay affirms that; “for domestic tuna development to work, the economic and policy environment has to enable private-sector development”.¹¹³ The World Bank also emphasises the importance of the private sector in strengthening the foundation of economic growth.¹¹⁴ A key element in creating the desired climate for private investment is good governance.¹¹⁵ The Asian Development Bank identifies four key principles to good governance that are fundamental to the socio-economic performance of the Pacific Island States, namely, accountability, participation, predictability and transparency.¹¹⁶ Hence, the domestication of tuna fisheries requires well thought out national policies and strategies

USA and Korea. See Michael Pretes and Elizabeth Petersen, *Rethinking Fisheries Policy in the Pacific*, Resource Management in Asia-Pacific, Working Paper No. 39, Research School for Pacific and Asian Studies, Australian National University (Resource Management in Asia-Pacific Programme, 2002).

¹¹⁰ Hannah Parris and R Quentin Grafton, *Tuna-Led Sustainable Development in the Pacific*, Australian National University Economics Working Paper EEN0507 (2005) 12.

¹¹¹ In a highly competitive tuna industry such as that of the Pacific, the profitable part of the industry such as distribution and marketing remains out of reach for the Island States. See R A Schurman, ‘Tuna Dreams: Resource Nationalisation and the Pacific Islands’ Tuna Industry’ (1998) 29(1) *Development and Change* 107, 136.

¹¹² William E Schrank, Ragnar Arnason and Rognvaldur Hannesson, *The Cost of Fisheries Management* (Ashgate Publishing, 2003) 9.

¹¹³ Kate Barclay and Ian Cartwright, *Capturing Wealth From Tuna: Key Issues for Pacific Island Countries- Country Profiles* (Asia Pacific Press, 2006) 22.

¹¹⁴ The International Bank for Reconstruction and Development, *A Better Investment Climate for Everyone* (WB and Oxford University Press, 2004) 1.

¹¹⁵ The OECD defines good governance as the exercise of political, economic and administrative authority necessary to manage a nation’s affairs. Good governance would therefore be characterised by, inter alia, participation, transparency, accountability, rule of law, effectiveness and equity. <http://stats.oecd.org/> (accessed 15 January 2011).

¹¹⁶ ADB, *Hardship and Poverty in the Pacific* (ADB, 2004).

that are designed to be flexible and adaptable to the changes occurring in the local tuna fishery and in the global arena as a whole.

It is argued that it would be far less risky for Pacific Island governments to focus on maximising resource rents derived from fishery access fees from both DWFNs and local fishing vessels and that some proportion of these funds could be deposited in a trust fund and invested globally as has been done successfully in Kiribati.¹¹⁷

7.5 Fisheries Access Agreements

Aside from the development of domestic tuna industries to secure economic gain from their EEZ resources, coastal States have also entered into access agreements as a form of managing foreign fishing. The legal basis for fisheries access agreements lies in the LOSC. The adoption of the LOSC in 1982 which enabled coastal States to exercise their jurisdiction over the [tuna] resources in the EEZ created the need for DWFNs to negotiate access to such resources which they had previously fished traditionally. As such, the LOSC recognises the special circumstances of certain States in accessing the surplus of the living resources of the EEZ.¹¹⁸ Nonetheless, the coastal State is ultimately sovereign in deciding to whom it grants access.¹¹⁹ The practise of many developing states to assign access rights to DWFNs has been driven by the need to generate revenue, their inability to fish surplus stocks and the need to satisfy the obligation in the LOSC to assign such surplus to other States for exploitation.¹²⁰ Thus under the terms of Article 62 of the LOSC which requires coastal States to avail the surplus [tuna] resources in their EEZ to ‘other States’,¹²¹ a developing coastal State like Kenya is able to derive economic benefits from the tuna resources in its EEZ in spite of its inability to harvest them. Most developing coastal States which lack the capacity to harvest the tuna resources in their EEZs have entered into fisheries access agreements with DWFNs as a

¹¹⁷ Asian Development Bank (ADB), *The Pacific's Tuna: Challenge of Investing in Growth* (ADB Manila, 1997); See also, Elizabeth Petersen ‘Economic Policy, Institutions and Fisheries Development in the Pacific’ (2002) 26(5) *Marine Policy* 315, 324.

¹¹⁸ LOSC, Art. 69 refers to land-locked States and Article 70 to geographically disadvantaged States being entitled to have access to any surplus of the EEZ resources of coastal States of the same region or sub-region.

¹¹⁹ Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 8.

¹²⁰ Keven L Cochrane and Serge M Garcia (eds), *A Fishery Manager's Guidebook* (FAO, 2009) 122.

¹²¹ LOSC, Art. 62(2).

means of trading the resources with developed States.¹²² Besides enabling developing coastal States to derive revenue from their tuna resources, fisheries access agreements can also foster the development of the tuna fishery.

Historically, fisheries access agreements were adopted in the late-seventies as a means of regulating the activities of foreign fishing vessels when most coastal States extended their jurisdiction over waters adjacent to their coasts.¹²³ Although bilateral agreements had been used earlier in situations of shared interest, most coastal States had licensed foreign fishing vessels for regulatory purposes.¹²⁴ However, most coastal States preferred to manage foreign fishing through access agreements rather than direct licensing because access agreements provided the means for coastal States to secure recognition of their jurisdiction and rights, and also for purposes of compliance and economic gain.¹²⁵ Additionally, access agreements provided an opportunity for the establishment of a framework which could incorporate requirements for foreign fishing States to adopt measures which ensured that they would comply with coastal States laws.¹²⁶

The recognition of the sovereign rights of coastal States through access agreements was most significant for highly migratory species like tuna, for facilitating the application of the relevant provisions of the LOSC.¹²⁷ Access agreements included the relevant wording requiring flag States to recognise the sovereign rights of the coastal State.¹²⁸ Such clarity was significant for developing coastal States whose interest was to derive benefits from the fish resources within their jurisdiction. These States could therefore exercise their rights and authority over the resources of the EEZ in accordance with the provisions of the LOSC. In fact, some coastal States made it a legal

¹²² Stephen Mbithi Mwikya, *Fisheries Access Agreements: Trade and Development Issues*, ICTSD Natural Resources, Issue paper No. 2 (2006).

¹²³ Les Clark, Perspectives on Fisheries Access Agreements: Developing Country Views, in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006).

¹²⁴ Ibid.

¹²⁵ Ibid.

¹²⁶ Ibid.

¹²⁷ Articles 63 and 64 of the LOSC require States to cooperate in the management of shared tuna stocks.

¹²⁸ Les Clark, Perspectives on Fisheries Access Agreements: Developing Country Views, in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006).

requirement for flag States to enter into a foreign fishing agreement before a fishing license could be issued.¹²⁹

Today, access agreements have become an increasingly important part of trade and development relations between developed and developing States, and they form the main supply for fishery species like tuna to DWFNS.¹³⁰ In principle, such agreements can be a positive way of managing the surplus fish stocks of developing coastal States and can be a source of much needed foreign exchange which can be channelled towards domestic management of fisheries and development of local fishing businesses.¹³¹ Thus, it is necessary to review the fundamental components of fisheries access agreements in order to gain an understanding of their role in facilitating tuna fisheries development.

Access agreements can be categorised according to their structure, either as bilateral or multilateral. They can also take the form of joint ventures. The following section provides a synopsis of the various types of bilateral access agreements and the nature of multilateral access agreements. Although the various types of access agreements are defined, this thesis focuses on bilateral fisheries access agreements concluded between developing coastal States and developed States. These types of agreements are particularly relevant to Kenya. The multilateral access agreements have been described in order to understand and appreciate the role they have played in the Pacific region tuna fisheries. These types of agreements will however not apply to Kenya alone as a State.

7.5.1 Bilateral Fisheries Access Agreements

Bilateral fisheries agreements are the most common category of agreements which establish the right of access to fishing zones of coastal States. Such agreements can be concluded between two governments, or as private agreements between industry association-to-government and company-to-government.¹³² Bilateral agreements prescribe the terms and conditions of access which may include the payment of a fee or

¹²⁹ For example, the fisheries legislation of the Federated States of Micronesia provides that; ‘no foreign fishing vessel shall be issued a permit to fish in the exclusive economic zone without having entered into a foreign fishing agreement’. See the Code of the Federated States of Micronesia, Marine Resources, Foreign Fishing Title 24, Chapter 4, Section 401. http://www.pacii.org/fm/legis/consol_act/mrff300/ (accessed 12 December 2010).

¹³⁰ Marcos Orellana, *Towards Sustainable Fisheries Access Agreements: Issues and Options at the World Trade Organisation* (UNEP, 2008) 1.

¹³¹ Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008.

¹³² Ibid.

the exchange of non-pecuniary rights.¹³³ Bilateral access agreements, most of which are concluded between a coastal State and a foreign fishing State, have a defined form and structure, and are implemented within a specific duration and by means of specific institutional mechanisms.¹³⁴

Aside from the level of access fees to be paid, other terms and conditions of access that may be included in bilateral access agreements are; the number and size of vessels that may fish in the prescribed area; areas of operation; gears to be used; catch quotas; and mechanisms for reporting. The structure of the agreement may vary depending on the parties that are undertaking it, and the provisions of the agreement may include mechanisms for cooperation and technical assistance.¹³⁵ The EU has concluded fifteen bilateral fisheries agreements with developing third States (twelve of them are tuna agreements),¹³⁶ which involve financial compensation. Most of these agreements have been concluded with African coastal States. (The EU agreements will be discussed in a subsequent section of the thesis).

A bilateral fisheries agreement in which access is exchanged for non-pecuniary rights is one that consists in the reciprocal right of access to fisheries.¹³⁷ This type of bilateral agreement provides mutual arrangements for neighbouring coastal States to access each others' fisheries resources, and is not contingent upon financial compensation. The EU has concluded such agreements that do not involve financial compensation with Faroe Islands, Norway and Iceland.¹³⁸ Seychelles and Mauritius have also concluded a similar agreement.¹³⁹

¹³³ Marcos Orellana, *Towards Sustainable Fisheries Access Agreements: Issues and Options at the World Trade Organisation* (UNEP, 2008) 10; Elizabeth Havice, *The State of Play of Access Agreements with Distant Water Fishing Partners: Implications and Options for Pacific Island countries*, FFA Briefing Paper (2007).

¹³⁴ Jean Carroz and Michel Savini, *The Practice of Coastal States Regarding Foreign Access to Fishery Resources (An analysis of bilateral agreements)*, in the FAO Report of the Expert Consultation on the Conditions of Access to the Fish Resources of the Exclusive Economic Zones, Rome, 11-15 April 1983, FAO Fisheries Report No. 293.

¹³⁵ Ibid.

¹³⁶ The developing States that have concluded bilateral fisheries agreements with the EU are Cape Verde, Comoros, Madagascar, Mozambique, Guinea, Guinea-Bissau, Seychelles, Mauritania, Kiribati, Morocco, Cote d'Ivoire, Micronesia, Sao Tome and Principe.

¹³⁷ Marcos Orellana, *Towards Sustainable Fisheries Access Agreements: Issues and Options at the World Trade Organisation* (UNEP, 2008)

¹³⁸ European Commission <http://ec.europa.eu/> (accessed 14 December 2010).

¹³⁹ Mauritius. http://www.stopillegalfishing.com/doc/publication/eng/mauritius_country_profile.pdf (accessed 14 December 2010).

The agreements between developed States differ significantly from those between developed and developing States. The provisions of the latter agreements are more likely to include technical assistance for fisheries development. Therefore, the owners of foreign fishing vessels would pay license fees and in addition the flag State would contribute towards the development of the fishing industry of the developing coastal State.¹⁴⁰ An example of a bilateral agreement between developed States is the EU-Norway annual bilateral agreement. This agreement which is the most important of all the fisheries agreements between the European Community and a third party, is reciprocal by nature and provides mutually balanced fishing possibilities of several fish stocks (herring, saithe, haddock and cod) for the States Parties.¹⁴¹ The EU-Norway agreement provides for conservation, scientific research and rational management and regulation of fisheries with no financial compensation.¹⁴² An example of a bilateral fisheries agreement between developed States and a developing coastal State is the EU-Mozambique agreement, which has a requirement for the EU to promote economic, scientific and technical cooperation in the fisheries sector.¹⁴³ The EU makes an annual financial contribution of €900000 to Mozambique.¹⁴⁴

7.5.1.1 Government-to-Government Agreements

The terms and conditions of government-to-government agreements are negotiated between governments of the DWFN and the coastal State. The DWFN government pays a fee to the coastal State for access to its fisheries resources. In

¹⁴⁰ Mohamed Dahmani, *The Fisheries Regime of the Exclusive Economic Zone*, (Martinus Nijhoff Publishers 1987) 152.

¹⁴¹ European Commission –Trade, <http://ec.europa.eu/> (accessed 14 December 2010).

¹⁴² Agreement on fisheries between the European Community and the Kingdom of Norway, Art. 2(2). <http://eur-lex.europa.eu/> (accessed 14 December 2010). A requirement of this agreement is for States parties to the agreement to provide information on the number of registered vessels which are eligible to operate within the other party's area of fisheries jurisdiction in order to facilitate the issuance of licenses, and to comply with the relevant conservation measures, term and conditions, and regulations governing fishing activities, including international law. See Agreement on fisheries between the European Community and the Kingdom of Norway, Arts. 5 and 6(2). <http://eur-lex.europa.eu/> (accessed 14 December 2010). The two parties have also concluded a long-term bilateral agreement on Mackerel in the North East Atlantic. See Ministry of Fisheries and Coastal Affairs, Press release 28.04.2010. <http://www.regjeringen.no/> (accessed 14 December 2010). The United States of America and Russia have concluded a similar agreement concerning high seas of the North Pacific Ocean and the Bering Sea. See Agreement Between the Government of the United States of America and the Government of the Union Of Soviet Socialist Republics on Mutual Fisheries Relations (Basic Instrument for The US-Russia Intergovernmental Consultative Committee-ICC).

¹⁴³ <http://eur-lex.europa.eu/> (accessed 14 December 2010).

¹⁴⁴ <http://ec.europa.eu/> (accessed 14 December 2010). This agreement is valid from 2007-2011.

addition the DWFN pays a fee for the license and administrative costs as provided in the agreement.¹⁴⁵ Such agreements often include provisions on development assistance.¹⁴⁶ Such bilateral agreements typically exist between the EU and the governments of several African, Caribbean and Pacific (ACP) States.

7.5.1.2 Government-to-Industry Association Agreements

Access agreements can be concluded between industry associations and coastal State governments. Most of the industry associations would have originated from fishery cooperatives and will usually negotiate for fisheries access on behalf of their members.¹⁴⁷ The associations would also pay all fees or the fees would be paid by industry association members.¹⁴⁸ These types of agreements have been concluded mainly with industry associations from Japan, Korea, Taiwan and China.¹⁴⁹ Such agreements are typical between Japanese fleets and some Pacific Island States. Most of these agreements are rolled over at the end of the agreed period following consultations and checks on the status of tuna stocks.¹⁵⁰ These associations may provide services to their members such as negotiating for fisheries access, supplies of fuel, bait gear and crew to vessel operators, license registration and administrative assistance.¹⁵¹ The associations take one negotiating position as a strategy to strengthen their bargaining power.¹⁵²

7.5.1.3 Government-to-Company Agreements

¹⁴⁵ Elizabeth Havice, *The State of Play of Access Agreements with Distant Water Fishing Partners: Implications and Options for Pacific Island Countries*, FFA briefing paper (2007).

¹⁴⁶ Elizabeth Havice, 'The Structure of Tuna Agreements in the Western and Central Pacific Ocean: Lessons for vessel day Scheme Planning' (2010) 34 *Marine Policy* 979, 981.

¹⁴⁷ Elizabeth Havice, *The State of Play of Access Agreements with Distant Water Fishing Partners: implications and Options for Pacific Island Countries*, FFA Briefing Paper(2007).

¹⁴⁸ Stephen Mbithi Mwikya, *Fisheries Access Agreements: Trade and Development Issues* (ICTSD, 2006) ix.

¹⁴⁹ Elizabeth Havice, 'The Structure of Tuna Agreements in the Western and Central Pacific Ocean: Lessons for vessel day Scheme Planning' (2010) 34 *Marine Policy* 979, 981.

¹⁵⁰ Kees Lankester, 'International Regulation and Market Tools for Sustainable Fisheries' (2003/2004) 1(4) *Journal of Integrative Environmental Sciences* 307, 320.

¹⁵¹ Elizabeth Havice, 'The Structure of Tuna Agreements in the Western and Central Pacific Ocean: Lessons for vessel day Scheme Planning' (2010) 34 *Marine Policy* 979, 981.

¹⁵² Elizabeth Havice, *The State of Play of Access Agreements with Distant Water Fishing Partners: implications and Options for Pacific Island Countries*, FFA Briefing Paper (2007). This tradition is changing with competition for licenses.

The governments of coastal States can negotiate access agreements with companies for direct licensing. These types of access agreements can either be between individual fishing companies and governments of coastal States or between fishing interests and coastal State governments requiring companies to make investments onshore.¹⁵³ In the former case where individual fishing companies engage with coastal State governments, the companies can comprise owners or operators of a fleet of vessels or a single vessel, while in the latter case part of the licensing agreement may require the foreign fishing interest to create a business operation or base the company in a coastal State.¹⁵⁴ The aim of the coastal State would be to derive economic gain from the business activities of such an operation, such as employment for its nationals.

These kinds of agreements have become popular in the Pacific Island States and have taken the form of either domestically-based foreign fishing companies or domestically-based foreign processing companies.¹⁵⁵ In the former case the foreign fishing firms register as a local company and can then purchase domestic licenses at a reduced price, while in the latter case the firms invest onshore (such as processing plants and net repairs) in exchange for foreign and/or domestic licenses.¹⁵⁶ These agreements which are common with Korean, Chinese or Taiwanese companies¹⁵⁷ are short term, usually one year and are renegotiated at the end of every term.¹⁵⁸

7.5.2 Multilateral Fisheries Access Agreements

The only multilateral treaty on fisheries is being implemented between the governments of the United States of America and sixteen Pacific Island Countries (PICs) in the Western and Central Pacific Ocean.¹⁵⁹ This treaty represents a model of

¹⁵³ Ibid. The onshore case is an example of second generation access agreements.

¹⁵⁴ Ibid.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid.

¹⁵⁷ Kees Lankester, 'International Regulation and Market Tools for Sustainable Fisheries' (2003/2004) 1(4) *Journal of Integrative Environmental Sciences* 307,320.

¹⁵⁸ Kees Lankester, Papa Samba Diouf and Khady Sane (eds.) 2002. *Fisheries Access in West Africa: Proceedings of two Workshops held in Senegal and Mauritania*, 2001(93).

¹⁵⁹ Stephen Mbithi Mwikya, *Fisheries Access Agreements: Trade and Development Issues* (ICTSD, 2006) ix. The parties to the treaty are; The United States of America, Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa. Australia does not derive financial benefit from this agreement. As a party to the treaty Australia is able to advance its interest in the sustainable management of the fisheries resources of the Pacific. See FFA, *Treaty on Fisheries between the*

international and fishery cooperation. The US treaty which came into force in 1988 is valid up to 2013, and grants fishing rights to at least 40 US purse seiners to the EEZs of all the PICs.¹⁶⁰ Under this agreement, the government of the United States cooperates with the PICs by providing technical and economic support towards their objective to maximise benefits from the development of Pacific Island fisheries resources.¹⁶¹

Among the benefits that the PICs obtain from this treaty are the fixed lump-sum access fees which are paid annually by the US regardless of the catch.¹⁶² The access fees which are distributed among the parties according to laid down procedures have increased from US\$14 million annually in 1988 to the current US\$21million.¹⁶³ Apart from the access fees, the US tuna industry covers the costs for observer programmes, vessel monitoring system deployment and a regional registration fee.¹⁶⁴ The FFA administers a project development fund amounting to US\$ 18million annually which can be equally accessed by any of the parties.¹⁶⁵ In summary, 85% of the revenue from the US agreement is paid to the PICs according to the volume of catch in their EEZs, while 15% goes towards aid and technical assistance.¹⁶⁶ Nationals of the Pacific Island

Governments of Certain Pacific Island States and the Government of the United States of America (hereinafter the US Treaty). <http://www.ffa.int/> (accessed 27 December 2010).

¹⁶⁰ Elizabeth Havice, *The Structure of Tuna Access Agreements in the Western and Central Pacific Ocean: Lessons for Vessel Day Scheme Planning* (2010) 34 *Marine Policy* 979, 983; Kees Lankester, Papa Samba Diouf and Khady Sane (eds.) 2002. *Fisheries Access in West Africa: Proceedings of two Workshops held in Senegal and Mauritania*, 2001(93). The numbers of vessels have varied between 35 to 50 from 1988.

¹⁶¹ FFA, *The Treaty between the US and PICS*, Article 2(2.1). <http://www.ffa.int/> (accessed 27 December 2010).

¹⁶² Stephen Mbithi Mwikya, *Fisheries Access Agreements: Trade and Development Issues*, ICTSD Natural Resources, ICTSD Series Issue Paper No. 2 (ICTSD, 2006) 13. This fixed payment is considered a drawback in terms of stock sustainability.

¹⁶³ See, Pacific Ocean Fora, <http://www.daff.gov.au/fisheries/international/multilateral/pacific-ocean-fora> (accessed 1 March 2010); Stephen Mbithi Mwikya, *Fisheries Access Agreements: Trade and Development Issues*, ICTSD Natural Resources, ICTSD Series Issue Paper No. 2 (ICTSD, 2006) 13. The FFA receives \$3million annually from the American Tuna boat Owners Association and pays towards treaty administration, divides 15% of the revenue equally among FFA member States and the 85% balance is divided according to the amount of tuna landed per EEZ. The balance of \$18 million is paid by the US government into an FFA administered economic development fund.

¹⁶⁴ <http://www.nmfs.noaa.gov/> (accessed 27 December 2010).

¹⁶⁵ FFA, *The Treaty between the US and PICS*. http://www.ffa.int/treaties_agreements (accessed 25 February 2010).

¹⁶⁶ Barry Coates, *Fishing for a Future: The Advantages and Drawbacks of a Comprehensive Fisheries Agreement between the Pacific and European Union*, A briefing paper by Oxfam, New Zealand. <http://www.oxfam.org.nz/> (accessed 27 December 2010).

parties are also employed on board US fishing vessels.¹⁶⁷ The benefits gained by the US for its participation in the treaty include canning, transshipment, slipping and repairs of their fishing vessels in the Pacific Islands, as well as purchase of supplies such as fuel.¹⁶⁸

The US treaty provides the legal foundation for measures concerning flag State responsibility and the enforcement procedures for instituting legal proceedings and imposing penalties in the event of infringement by US fishing vessels,¹⁶⁹ compliance procedures applicable to US fishing vessels for breach of the treaty obligations,¹⁷⁰ and settlement of disputes.¹⁷¹ In respect of flag State responsibility, the government of the US is obligated to ensure that both its nationals and fishing vessels operate in the designated areas,¹⁷² and adhere to all the terms of the fishing license including using appropriate gears,¹⁷³ and observing the applicable national laws.¹⁷⁴ Pacific Island parties' observers are to be facilitated to board US fishing vessels to perform their duties like obtaining scientific information, compliance and monitoring.¹⁷⁵

The Multilateral agreement provides a strong negotiating position for the PICs and encourages better implementation of conservation measures for tuna. The involvement of parties in the negotiations also enhances transparency. However, such agreements are challenged by the ability of individual States to achieve their national goals which vary from State to State.¹⁷⁶ Individual States may therefore not be fulfilled

¹⁶⁷ FFA, *The Treaty between the US and PICS*, Article 2(2.2)(c). <http://www.ffa.int/> (accessed 27 December 2010).

¹⁶⁸ FFA, *The Treaty between the US and PICS*, Article 2(2.2)(a) & (b). <http://www.ffa.int/> (accessed 27 December 2010).

¹⁶⁹ FFA, *The Treaty between the US and PICS*, Article 4. <http://www.ffa.int/> (accessed 27 December 2010).

¹⁷⁰ FFA, *The Treaty between the US and PICS*, Article 5. <http://www.ffa.int/> (accessed 27 December 2010).

¹⁷¹ FFA, *The Treaty between the US and PICS*, Article 6. <http://www.ffa.int/> (accessed 27 December 2010).

¹⁷² FFA, *The Treaty between the US and PICS*. Article 4(4.1) and Annex 1. <http://www.ffa.int/> (accessed 27 December 2010). The treaty provides a list of closed areas.

¹⁷³ FFA, *The Treaty between the US and PICS*, Article 4(4.5). <http://www.ffa.int/> (accessed 27 December 2010).

¹⁷⁴ FFA, *The Treaty between the US and PICS*, Article 4(4.6) and Annex 1. <http://www.ffa.int/> (accessed 27 December 2010).

¹⁷⁵ FFA, *The Treaty between the US and PICS*, Annex 1 Part 7. <http://www.ffa.int/> (27 December 2010).

¹⁷⁶ Barry Coates, *Fishing for a future: The Advantages and Drawbacks of a Comprehensive Fisheries Agreement between the Pacific and European Union*, a briefing paper by Oxfam, New Zealand. <http://www.oxfam.org.nz/> (accessed 27 December 2010).

if a multilateral approach is applied.¹⁷⁷ In addition, the lack of supportive institutional arrangements and the implications of setting up such institutions with regards to their distribution between the PICs impairs such cooperation.¹⁷⁸ PICs need incentives in order to pool resources,¹⁷⁹ but they also need to agree on the division of rents and the level of exploitation to succeed in joint exploitation through such cooperation.¹⁸⁰

As discussed above, the US multilateral treaty is unique to the Pacific Island States and is regional in nature. Such an arrangement will therefore not apply to Kenya alone, if it were to be adopted. Kenya would require the cooperation and involvement of other developing coastal States in the WIO region such as Tanzania, Seychelles, Mozambique, Madagascar and Comoros. Most importantly, the Pacific Islands Fisheries Forum Agency (FFA) administers and provides support for the implementation of the US multilateral treaty.¹⁸¹ The support of the FFA is entirely significant in providing a regional framework for the successful implementation of this treaty. Such a framework would be necessary if Kenya, jointly with the coastal States in the WIO is to consider adopting a multilateral approach to the development of their tuna resources.

In chapter 3(3.2.3), it was seen that a regional framework for the coastal States of the Southwest Indian Ocean existed under the auspices of the now-defunct Western Indian Ocean Tuna Commission (WIOTO). The objectives of WIOTO were; harmonization of fisheries policies; relations with DWFNs; fisheries surveillance and

¹⁷⁷ For example PICS have been reluctant to cooperate in multilateral arrangements not only because their officials think they would be ‘surrendering their sovereignty’ or would not be in a position to negotiate ‘tailor made’ agreements that meet their individual needs but also fear of losing personal incentives/benefits from bilateral negotiations and reduction in bilateral aid. See, Kate Barclay and Ian Cartwright, ‘Governance of Tuna Industries: The Key to Economic Viability and Sustainability in the Western and Central Pacific Ocean’ (2007) 31 *Marine Policy* 348, 358; Satish Chand, R Quentin Grafton, Elizabeth Petersen, *Multilateral Governance of Fisheries: Management and Cooperation in the Western and Central Pacific Tuna Fisheries*, Working paper no. 34, Resource Management in Asia-Pacific (2002).

¹⁷⁸ Satish Chand, R Quentin Grafton, Elizabeth Petersen, *Multilateral Governance of Fisheries: Management and Cooperation in the Western and Central Pacific Tuna Fisheries*, Working paper no. 34, Resource Management in Asia-Pacific (2002).

¹⁷⁹ ADB, ‘On Or Beyond The Horizon: A Discussion Paper on Options for Improving Economic Outcomes from the Western and Central Pacific Tuna Fishery’, July 2005 in Barry Coates, *Fishing for a Future: The Advantages and Drawbacks of a Comprehensive Fisheries Agreement between the Pacific and European Union*, a briefing paper by Oxfam, New Zealand.

¹⁸⁰ Satish Chand, R Quentin Grafton, Elizabeth Petersen, *Multilateral Governance of Fisheries: Management and Cooperation in the Western and Central Pacific Tuna Fisheries*, working paper no. 34, Resource Management in Asia-Pacific (2002).

¹⁸¹ US Multilateral Treaty <http://www.ffa.int/> (accessed 15 March 2011).

enforcement; fisheries development; and access to EEZs of members.¹⁸² A similar organisation such as WIOTO could probably play a role like the FFA for the Indian Ocean States. Without such a framework it is highly unlikely for Kenya to implement a multilateral treaty.

7.5.3 Fisheries Joint Ventures

Fisheries access agreements can take the form of joint ventures. The LOSC recognises joint ventures as a mechanism through which coastal States can cooperate with nationals of other States wishing to fish in their EEZs. As such, the LOSC entitles coastal States to establish requirements relating to joint ventures for such purposes.¹⁸³ Broadly defined, a joint venture is a collaborative business undertaking between two or more parties. This thesis adopts the definition provided by the FAO where ‘Joint venture’ is defined as, “an association of two or more partners who share risks and benefits of a joint commercial enterprise”.¹⁸⁴ According to OECD, the combination of capital from the partners (often from different countries) in such enterprises often provides opportunities for trade in fisheries products and trade in fisheries services.¹⁸⁵

Joint venture agreements facilitate cooperation between developed States which may provide technology and other forms of support, and developing coastal States with tuna fisheries resources.¹⁸⁶ The interests of these partners in a fisheries joint venture vary. For developing coastal States, joint ventures provide a contribution of capital (hard currencies, infrastructure and equipment); transfer of technology and skills to the coastal State; operational infrastructure; and access to foreign markets.¹⁸⁷ Some developing States also endeavour to have gradual national control of the joint

¹⁸² S M Marashi, *Summary Information on the Role of International Fishery and other Bodies with regard to the Conservation and Management of Living Resources of the High Seas*. FAO Fisheries Circular C908 (FAO, 1996).

¹⁸³ LOSC, Art. 62(4)(i).

¹⁸⁴ U Tietze, *Report of the Workshop on the Role of Financial Institutions in Strengthening National Fisheries Industries and Privatization of Fisheries Investment in Small Island Developing States*. Port of Spain, Trinidad and Tobago, 24-28 June 1996. FAO Fisheries Report No. 549.

¹⁸⁵ OECD, *Glossary of Statistical Terms* (OECD, 2008) 294.

¹⁸⁶ G K Libaba, ‘Tanzania’s Experience on Fisheries Management and Development’ in Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone* (Transaction Publishers, 1998) 125.

¹⁸⁷ D F Greboval, *Major Economic Considerations for the Preparation and Negotiation of Fisheries Joint Ventures (with special reference to African Fisheries)* (SWIOP, 1986). <http://www.fao.org/> (accessed 2 January 2011); Craig C Julian, *International Joint Venture Performance in South East Asia* (Edward Elgar Publishing, 2005) 44.

venture.¹⁸⁸ An example of a joint venture in which the national government of a developing coastal State exhibits dependence upon foreign expertise, technology, and capital from a transnational corporation is the Solomon-Taiyo Limited between the Solomon Islands and Japan (1971-2000).¹⁸⁹ The developed State on the other hand, mainly aims to obtain a profit by accessing the tuna resources of the coastal State and in addition, to sell their inputs and services to the venture; exploit local or neighbouring markets; have a base for fishing operations; benefit from the local knowledge of the partner and benefit from incentives of both the host government and/or the partner's government.¹⁹⁰

Similarly, the partners in a fisheries joint venture have varied concerns. The foreign partner may be concerned about restrictions on fisheries; difficulties in local procurement and import of equipment; high turnover rates for local operations (including the costs for hiring, training, and overstaffing requirements by host government); high start up costs, and restrictions on export of profits in foreign exchange.¹⁹¹ The developing coastal State on the other hand, would be concerned about reluctance of foreign crews to train locals; provision of equipment not suitable for local operation; exploitation of inexperienced host country partners; interference of joint venture operation with local fishermen; high wages paid to crews and breaching of the terms of the joint venture.¹⁹² In summary, the cooperation in joint ventures brings together a combination of complementary competences which are likely to enhance the performance of the joint venture if transferred effectively.¹⁹³

Coastal States may subject joint ventures to national legislative control in order to ensure real participation of local interests. For example, in an equity-based international joint venture the terms of equity sharing are very important. Equity share is measured by percentage. In Mauritania for example, when joint ventures were

¹⁸⁸ Craig C Julian, *International Joint Venture Performance in South East Asia* (Edward Elgar Publishing, 2005) 44.

¹⁸⁹ Kate Barclay, *A Japanese Joint Venture in the Pacific: Foreign Bodies in Tinned Tuna* (Routledge, 2008) 77.

¹⁹⁰ D F Greboval, *Major Economic Considerations for the Preparation and Negotiation of Fisheries Joint Ventures (with special reference to African Fisheries)*. (SWIOP, 1986). <http://www.fao.org/> (accessed 2 January 2011).

¹⁹¹ Ibid.

¹⁹² Ibid.

¹⁹³ Robert Clarence Hill, *Joint Venture Strategy Formulation and Implementation: A Contingency Approach*, PhD Thesis, Texas A&M University, 1988.

initiated in 1979, one of the objectives of the fisheries policy was to create joint ventures that were Mauritanian-controlled. Such joint ventures thus implied a government share of 43%, an 8% local private sector share and 49% foreign share.¹⁹⁴ Similarly, the Indian Ocean Tuna Ltd. (IOT) joint venture between the Seychelles government and Heinz has a shareholding of 60:40 respectively,¹⁹⁵ while the Fiji Fish company operating in the longline tuna fishery of Fiji in 2005 owned 30% of the 25 vessels in a joint venture with Taiwanese vessel owners, with half the crew on these vessels made up of Fijians, while the rest were Indonesian, Chinese and Filipinos.¹⁹⁶ In Senegal majority shareholding is recommended for all fishing operations with an aim of naturalization at the end,¹⁹⁷ while Ghana's *Fisheries Act* stipulates that at least 50% of shares in all tuna vessels must be owned by Ghanaian citizens, the Ghanaian government, a company or partnership registered by law in Ghana.¹⁹⁸

7.5.3.1 Benefits for Developing Coastal States from Fisheries Joint Ventures

Developing coastal States have benefitted from joint venture agreements in fisheries which have provided the opportunity for them to develop fishing capacity in partnership with foreign investors, often using vessels that are already operational with an experienced crew.¹⁹⁹ For example, Namibia has created a fisheries sector with substantial constructive foreign participation by developing a management regime that enables local rightholders in its fisheries to charter foreign vessels through joint ventures,²⁰⁰ while most tuna fishing vessels in Ghana are operated under joint venture arrangements with foreign companies often from Korea.²⁰¹

¹⁹⁴ http://www.photius.com/countries/mauritania/economy/mauritania_economy_fishing.html (accessed 5 January 2011).

¹⁹⁵ Philippe Michaud, *Experience from the bilateral fisheries access agreement, impact on the economy and implication for Seychelles of the outcome of the WTO mediation on the case of tuna between the EU and Thailand and Philippines*, Seminar on ACP-EU fisheries relations: towards a greater sustainability ACP Secretariat, Brussels, Belgium 7-9 April 2003.

¹⁹⁶ Kate Barclay and Ian Cartwright, *Capturing Wealth from Tuna-Key Issues for Pacific Island Countries* (2006) 37.

¹⁹⁷ R Hamlish and G K F Moore, *Joint Ventures in Fishery Development in the CECAF Area* (1975).

¹⁹⁸ Republic of Ghana, *Fisheries Act 2000*, Section 47.

¹⁹⁹ Robin Mahon and Patrick McConney, *Management of Large Pelagic Fisheries in CARICOM Countries*. FAO Fisheries Technical Paper 464 (FAO, 2004) 91.

²⁰⁰ Sumaila *et al*, *Namibia's Fisheries: Ecological, Economic and Social Aspects* (Eburon Academic Publishers, 2004). After achieving independence in 1990, Namibia inherited fisheries that had been heavily overfished by DWFNs from the apartheid system. Through a policy of Namibianisation, which

Joint venture agreements have also provided opportunities for the development of infrastructure, availability of markets for fisheries products, development of technical skills and enhanced fisheries management for developing coastal States that lack the capability to develop their tuna fisheries. On the other hand, DWFNs have been able to secure access to fisheries resources mostly in the EEZs of developing coastal States. Such agreements may be government controlled or they can also be established privately between foreign private firms and local firms in the coastal State with tuna resources.²⁰²

For instance, Japanese fishing companies have maintained locally-based presence in the western Pacific for a long time. Between late 1950s and 1980s these companies established a significant number of tuna fishing joint ventures in the Western Pacific which involved various onshore investments.²⁰³ As a result of such arrangements, the Pacific Island States have realised substantial financial benefits from shore based developments and value-added seafood processing activities.²⁰⁴ The Japanese favoured such joint-ventures with the Pacific Island States for various reasons. First, joint ventures secured supplies for Japanese markets,²⁰⁵ and gave Japan allies in international fisheries debates.²⁰⁶ Second, Japan could export tuna products to the main markets in Europe and US under the preferential trade arrangements between the ACP coastal States and the EU through its association with the Pacific Island States. Third, the Japanese could access live bait in the Pacific for skipjack fishing.²⁰⁷ Examples of

ensured a greater degree of Namibian participation, the State developed a management regime based on limited access and allocation of rights. Through foreign investment, the goals for Namibianisation and onshore development were readily achieved. See also, Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views' in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development in Fisheries* (OECD, 2006) 93.

²⁰¹ Ragnhild Overa, 'When Sisters Become Competitors: Coastal Women's Access and Utilisation of Trawlers' By-catch in Ghana' in Barbara Neis, Marian Binkley, Siri Gerrard and Maria Cristina Maneschy, *Changing Tides: Gender, Fisheries and Globalization* (Fernwood Publishing, 2005) 136.

²⁰² Aggrey K L J Mlimuka, *The Eastern African States and the Exclusive Economic Zone* (Transaction Publishers, 1998) 125.

²⁰³ Kate Barclay, *A Japanese Joint Venture in the Pacific: Foreign Bodies in Tinned Tuna* (Routledge, 2008) 77.

²⁰⁴ Ibid 77.

²⁰⁵ Roger Farell, *Japanese Investment in the World Economy: A Study of Strategic Themes in the Nationalisation of Japanese Industry* (Edward Elgar Publishing Limited, 2008) 128.

²⁰⁶ Anthony Bergin and Marcus Haward, *Japan's Tuna Fishing Industry: A Setting Sun or New Dawn?* (Nova Science Publishers, 1996) 124.

²⁰⁷ Kate Barclay, *A Japanese Joint Venture in the Pacific: Foreign Bodies in Tinned Tuna* (Routledge, 2008) 76.

some companies that were established between the Japanese fishing companies and the Pacific Island governments discussed earlier include the Solomon Taiyo in Solomon Islands and PAFCO in Fiji, both of which established canneries that are still operational.²⁰⁸

Similarly, the African States have relied on joint ventures to develop their fishing industry since the mid 70s.²⁰⁹ By the 1980s the majority of joint ventures were to be found in Africa, with most partners originating from Asia and Europe.²¹⁰ During this period Africa hosted 32% of the joint ventures in which 51% of the foreign partners originated from the Middle Eastern and Asian countries and 33% from Europe.²¹¹ Tuna fisheries represented 22% of these joint ventures.²¹² Today, joint ventures still prove beneficial to States such as South Africa,²¹³ Mauritania,²¹⁴ and Senegal.²¹⁵

The successful implementation of a joint venture depends fundamentally on the partners having a clear understanding and appreciation of each others objectives in the venture.²¹⁶ In this regard, coastal States and DWFNs, or companies compliment each other as far as skills, costs and markets are concerned, and must therefore be willing to cooperate towards the achievement of their objectives.²¹⁷ Partners are motivated to enter

²⁰⁸ Kate Barclay, *History of Industrial Tuna Fishing in the Pacific Islands: A HMAP Asia Project Paper*, Working Paper no. 169 (2010).

²⁰⁹ D F Greboval, *Major Economic Considerations for the Preparation and Negotiation of Fisheries Joint Ventures (with special reference to African Fisheries)* (SWIOP, 1986). <http://www.fao.org/> (accessed 2 January 2011).

²¹⁰ Nik Mustapha bin Raja Abdulla, Richard S Johnson and R Bruce Rettig, 'Joint Ventures in Fisheries' in James Barney Marsh (ed.), *Resources and Environment in Asia's Marine Sector* (Taylor and Francis New York Inc., 1992) 112.

²¹¹ Ibid 114. The bulk of joint ventures in Africa were located on the Atlantic coast, with Mauritania, Morocco, Senegal and Nigeria actively engaging with Japan, France, Spain, the former Soviet Union and Portugal.

²¹² Ibid.

²¹³ Joint ventures in tuna longline with Japan.

²¹⁴ Joint ventures have ensured the construction of infrastructure to produce and maintain a competitive fishing industry. See <http://www.worldfishing.net/features/new-horizons/mauritania> (accessed 5 January 2011).

²¹⁵ Joint ventures with the EU.

²¹⁶ D F Greboval, *Major Economic Considerations for the Preparation and Negotiation of Fisheries Joint Ventures (with special reference to African Fisheries)* (SWIOP, 1986). <http://www.fao.org/> (accessed 2 January 2011).

²¹⁷ FAO, *The Report of the Expert Consultation on the Conditions of Access to the Fish Resources of the Exclusive Economic Zones*, FAO Fisheries Report No. 293 Rome, 11-15 April 1983. A coastal country may be the source of tuna resources, offer shore facilities and low-cost labour while a foreign company may provide the capital, management and market access.

into a joint venture arrangement to fulfil their need for additional resources,²¹⁸ recognising that together they can develop ‘synergy to permit a greater probability of success than the sum of their individual probabilities’.²¹⁹

7.5.3.2 Legal and Policy Practices Relating to Fisheries Joint Ventures

Generally, joint ventures have played and continue to have an important role in developing the tuna fishing industry in developing coastal States. Since most joint ventures in tuna fisheries are established between developing coastal States and foreign partners, some developing coastal States have made efforts to formulate policies that would attract foreign investments as a mechanism for promoting the formation of joint ventures. Such States endeavour to provide the appropriate incentives and an enabling regulatory environment in order to facilitate the development of the tuna industry. Some of these States have therefore liberalised their economies by providing fiscal and monetary incentives, implementing appropriate policies and providing the relevant institutional support.

The Seychelles’ fisheries policy for example, perpetuates the State’s vision to ‘create an efficient and productive environment for the promotion of investment, production and trade in the fisheries sector’ by encouraging joint ventures between local and foreign entrepreneurs with a view to developing its national tuna harvesting capability for the social and economic benefit of its citizens.²²⁰ Hence, the Seychelles *Agriculture and Fisheries Incentive Act* provides various concessions in form of trades tax on equipment and commercial vehicles; goods and services tax (GST) on raw materials; business tax on marine resources investments; social security; gainful occupation permit concessions; fuel concessions; accelerated depreciation on capital investment other than land and building; and marketing and promotion expenses.²²¹

Aside from enabling policies, some coastal States have enacted legislation with specific legal provisions governing fishing joint ventures. For example, the Fisheries

²¹⁸ Robert Clarence Hill, *Joint Venture Strategy Formulation and Implementation: A Contingency Approach*-PhD thesis, Unpublished (1988).

²¹⁹ J W C Tomlinson and P.S. Brown, ‘Joint Ventures with Foreigners as a Method of Exploiting Canadian Fishery Resources under Extended Fisheries Jurisdiction’ (1979) 5 *Ocean Management* 251, 256.

²²⁰ Seychelles Investment Bureau, <http://www.sib.gov.sc/pages/invsey/FisheriesSector.aspx> (accessed 3 January 2011).

²²¹ Fisheries investment, <http://www.sib.gov.sc/pages/invsey/FisheriesIncentives.aspx> (accessed 25 February 2010).

Act of Malaysia authorises the Minister to make regulations to prescribe the rules and procedures in respect of foreign capital investment and joint venture proposals in fisheries, including the procedures for effective transfer of technology and training of Malaysian Personnel.²²² In Indonesia, government regulations provide for the cooperation between nationals and foreigners in joint ventures in order to achieve optimum utilisation of the fisheries resources of the Indonesian EEZ.²²³ To implement this regulation, a Ministerial Decision regulating fishing vessels in the Indonesian EEZ has been promulgated to ensure the responsible, optimal and sustainable utilisation of fisheries resources in the Indonesian EEZ. Joint ventures have been suggested as one of the mechanisms for utilising such resources.²²⁴ Joint venture companies are to be established in accordance with Indonesian investment regulations.²²⁵ These companies are obliged to construct a fish processing unit if they operate 20 or more vessels, at a minimum value of 20% of the total value of operating vessels.²²⁶ Some Latin American and African States make access to EEZ resources contingent upon the establishment of joint ventures with coastal State companies.²²⁷

7.5.3.3 Fishing Joint Venture Experience in Kenya

The availability of pertinent information on foreign fishing in the Kenyan exclusive economic zone is very limited. However, the limited documentation regarding some of the historical fishing activities in the zone provides evidence of some domestic activities in the Kenyan EEZ since the 70s. Historically, the Japanese have operated tuna longline fishing vessels in Kenya since the 1970s under joint ventures.²²⁸ A joint venture between the Kenya Maritime Company, Industrial Credit Development

²²² Laws of Malaysia, *Fisheries Act 1985*, Art. 61(a).

²²³ Indonesia, *Government Regulation 15 of 1984 Concerning Fisheries Resources Management in the Indonesian Exclusive Economic Zone*, Art. 2(3).

²²⁴ Indonesia, *Decision of the Minister of Marine Affairs and Fisheries Concerning the Regulation of Fishing Vessels Operations in the Indonesian Exclusive Economic Zone*.

²²⁵ Indonesia, *Decision of the Minister of Marine Affairs and Fisheries Concerning the Regulation of Fishing Vessels Operations in the Indonesian Exclusive Economic Zone*, Article 4(1).

²²⁶ Indonesia, *Decision of the Minister of Marine Affairs and Fisheries Concerning the Regulation of Fishing Vessels Operations in the Indonesian Exclusive Economic Zone*, Article 6(1)

²²⁷ R R Churchill and A V Lowe, *The Law of the Sea* (3rd Edition), (Manchester University press, 1999) 291.

²²⁸ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

Corporation and ‘Ataka and Taiyo’ company of Japan was one of the operations in the Kenyan EEZ during this time.²²⁹ The longline fishing operation which engaged Japanese fishing vessels was under operation for a for three years. The Japanese fishing vessels withdrew from the joint venture citing poor arrangements for transshipment.²³⁰ Upon the withdrawal of Japan from the joint venture, Industrial Credit Development Corporation formed Kenya Fishing Industries in an attempt to establish a national tuna longline industry.

The fishing vessels operating under Kenya Fishing Industries were foreign joint venture vessels from Asia. Thus in 1980, Kenya Fishing Industries commissioned the construction of two longliners in Korea, *FV Alpha Funguo* and *FV Alpha Uchumi* in its efforts to secure its own fishing vessels. Both these vessels were operated by expatriate Korean skippers and Kenyan crew members.²³¹ The operations of Kenya Fishing Industries were short-lived and it collapsed due to high operating costs, poor marketing and low catches of tuna.²³² A third company Southern Engineering Company Limited acquired the vessels from Kenya Fishing Industries in 1993 and in addition Southern Engineering Company Limited purchased another vessel, *Alpha Alana*. The operations of Southern Engineering Company Limited were also short-lived and in 1995 it shut down due to poor catches.²³³

The efforts to establish joint ventures in Kenya appear to have been hampered by infrastructural problems and the prevailing governance structure from the initial stages. This problem may also have been aggravated by the lack of knowledge and understanding about the population dynamics of tuna, the state of the tuna stocks and their migratory patterns. Beside natural processes and technological issues, these factors might have contributed to the low levels of tuna catches from the fishing operations. There is no doubt that the financial inputs may have also been prohibitive. Thus far, it appears that the operation of joint ventures has not been successful in Kenya.

²²⁹ George Habib, *The Kenya Marine Fisheries*, A final report of the Commonwealth Secretariat consultation on stock assessment (2003).

²³⁰ Ibid.

²³¹ Ibid.

²³² Ibid.

²³³ Ibid.

7.5.3.4 Issues Associated with Fisheries Joint Ventures

There are certain drawbacks associated with fisheries joint ventures. The challenges that joint ventures are likely to manifest which are significant for developing States broadly include; financial risk and the financial manipulation by the DWFNs.²³⁴ DWFNs have financial, technical and market access advantages which developing coastal States need for the development of their tuna fisheries and national economies. By having control over managing and marketing of the venture, DWFNs often charge excessive fees for these services to enhance their returns while denying profits to the coastal State.²³⁵ Consequently, the venture may not have the anticipated national economic impact.²³⁶ Joint ventures are also complex to evaluate, negotiate and implement compared to other forms of foreign participation. This is because joint ventures involve multiple internal inter-organisational and intercultural relationships.²³⁷ Joint ventures can therefore be expensive to negotiate and time consuming.²³⁸

In some situations joint ventures may compete for fishing grounds against local fishers and also amongst each other, resulting in conflicts that may limit fishing operations and also threaten the stocks.²³⁹ Conflicts such as these can make it difficult to plan joint ventures between coastal fishing States with large numbers of artisanal fishers and DWFNs especially when two or more nationalities or ethnic groups are involved.²⁴⁰ Some States have formulated policies to deal with such situations. For example, the investment policy in Ghana designates areas set aside for the State, areas where foreign

²³⁴ FAO, *The Report of the Expert Consultation on the Conditions of Access to the Fish Resources of the Exclusive Economic Zones*, Rome, 11-15 April 1983. FAO Fisheries Report No. 293. Under such cooperation losses and profits are shared. However, the more experienced partner may use financial manipulation to evade a fair sharing of profits and losses.

²³⁵ David J Doulman, 'Joint Ventures in Fisheries Development: Their Potential and Investment Alternatives' in U Tietze and M. Izumi (eds), *Selected Papers Presented at the Workshop on Economic Strengthening of Fisheries Industries in Small Island Developing States in the South Pacific*, Apia, Samoa, 14-18 September 1998. FAO Fisheries Report No. 596.

²³⁶ Ibid.

²³⁷ L C Christy, 'Forms of Foreign Participation in Fisheries: Coastal-States policy', in D.F.Greboval, *Major Economic Considerations for the Preparation and Negotiation of Fisheries Joint Ventures (with special reference to African Fisheries)*. (SWIOP, 1986). <http://www.fao.org/> (accessed 2 January 2011).

²³⁸ E R Auster, 'The courting rituals of U.S. and Japanese prospective parent companies: Preliminary data analysis'; S V Berg and P Friedman, 'Corporate courtship and successful joint ventures', in Robert Clarence Hill, *Joint Venture Strategy Formulation and Implementation: A Contingency Approach*, PhD Thesis, Texas A&M University, 1988.

²³⁹ Nik Mustapha bin Raja Abdulla, Richard S Johnson and R Bruce Rettig, 'Joint Ventures in Fisheries' in James Barney Marsh (ed), *Resources and Environment in Asia's Marine Sector* (Taylor and Francis, 1992) 123.

²⁴⁰ Ibid 124.

ownership is to be associated with local interests and areas where foreign ownership alone is allowed.²⁴¹ The employment of workers in a joint venture can also be a source of conflict. This is because host countries usually limit the number of foreigners who can be employed and the length of their stay in the country. Joint venture agreements may also have a condition requiring the employment of nationals of coastal States. However, most local people may not have the knowledge, skill and experience required in fishing and processing practices.²⁴² This list is not however exhaustive as joint ventures vary in structure and will present unique challenges.

In many Japanese fishing joint ventures for example, it is believed that the breakdown has resulted from lack of clarity in procedures for dealing with dissatisfaction and disengagement.²⁴³ Generally other challenges of joint ventures which ought not to stand in the way of cooperation result mainly from 'lack of understanding of partners objectives', 'lack of definition of responsibilities and contributions', and 'inaccurate prediction of relative costs and benefits'.²⁴⁴ In spite of these challenges joint ventures are important to global tuna fisheries.

As the capital, services and other facilities in a fishing joint venture are to be shared, it will be necessary for Kenya to establish a stable capital base and also to identify suitable partners to participate in such a development if it is to implement joint ventures. As discussed above (7.5.3.3), Kenya's infrastructure, governance structure and expertise ought to lend support to such an initiative. The role of the private sector is also key to the implementation of joint ventures, particularly regarding capital, technology and management. Kenya may impose a condition for employment and/or training of its nationals under a joint venture agreement, thereby developing a variety of skills and capabilities in the tuna industry.

²⁴¹ R Hamlish and G K F Moore, *Joint Ventures in Fishery Development in the CECAF Area* (1975).

²⁴² Nik Mustapha bin Raja Abdulla, Richard S. Johnson and R. Bruce Rettig, 'Joint Ventures in Fisheries' in James Barney Marsh (ed.), *Resources and Environment in Asia's Marine Sector* (Taylor and Francis, 1992) 124.

²⁴³ K Honda, 'Fishery joint ventures in developing countries', in J W C Tomlinson and P S Brown, 'Joint Ventures with Foreigners as a Method of Exploiting Canadian Fishery Resources under Extended Fisheries Jurisdiction' (1979) 5 *Ocean Management* 251-261.

²⁴⁴ J W C Tomlinson and P S Brown's 'Joint Ventures with Foreigners as a Method of Exploiting Canadian Fishery Resources under Extended Fisheries Jurisdiction' (1979) 5 *Ocean Management* 251-261.

7.5.4 The Role of Fisheries Access Agreements for Developing Coastal States

Generally, access agreements provide a source of foreign exchange earnings or access to developed States' markets that developing coastal States may otherwise not be able to obtain.²⁴⁵ The earnings from fisheries access agreements make a significant contribution to government revenue for some developing coastal States. The coastal States of the Sub-Saharan West Africa for example, are heavily dependent on revenues accruing from licence fees paid under access agreements, and for most of these States coastal fishery resources are the most significant natural asset.²⁴⁶

For example, 25% of the government budget of Mauritania comes from the €86 million earned from the Mauritania-EU agreement.²⁴⁷ Additionally, Mauritania and Senegal receive up to 50% of their export revenue from fish products.²⁴⁸ Although some Pacific Island States (Cook Islands, Fiji, Niue, Tonga and Samoa) have developed local fishing industries, fisheries access agreements remain a major source of revenue for Kiribati, Tokelau, Nauru and Tuvalu.²⁴⁹ In Kiribati and Federated States of Micronesia, access fees amount to about 45% and 25% of government revenue respectively.²⁵⁰

Access agreements also have the potential to aid the integration of fishing or fish-processing industries in developing States into the global economy, and can help promote conservation and sustainable fisheries if well implemented.²⁵¹ Such agreements are still used as the main mechanism of foreign participation by flag States in the EEZs of many coastal States. For this reason, the national legislation of some States

²⁴⁵ Anthony Cox, and Carl-Christian Schmidt, *Financial Support to Fisheries: Implications for Sustainable Development* (OECD, 2006) 86.

²⁴⁶ Vlad M Kaczynski and Stuart W Looney, 'Coastal resources as an Engine of Economic Growth and Reduction of Poverty in West Africa: Policy Considerations' (2000) 28 *Coastal Management* 235, 248; Jacqueline Alder and Ussif Rashid Sumaila, 'Western Africa: A Fish Basket of Europe Past and Present' (2004) 13(2) *Journal of Environment and Development*, 156, 178; Milan Illyckyj, *The Legality and Sustainability of European Union Fisheries Policy in West Africa*, MIT International Review, Spring 2007.

²⁴⁷ MRAG, *Fisheries and Access Agreements*, DFID Policy brief No. 6, <http://www.mrag.co.uk> (accessed 22 April 2009).

²⁴⁸ Developments magazine, <http://www.developments.org.uk/articles/can-the-tide-turn-for-african-fisheries/> (accessed 27 December 2010).

²⁴⁹ Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views' in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development in Fisheries* (OECD, 2006).

²⁵⁰ Marcos Orellana, *EEZ Fisheries Access Arrangements and the WTO Subsidies Agreement: Legal Analysis and Options for Improved Disciplines* (UNEP, 2007).

²⁵¹ David Schorr, *Healthy Fisheries, Sustainable Trade. Crafting New Rules on Fishing Subsidies in the World Trade Organisation* (WWF, 2004).

recognises and gives effect to access agreements as a mechanism for foreign fishing. Examples of the fisheries legislation of Seychelles and PNG are representative.

The *Seychelles Fisheries Act 1987* authorises the Minister to enter into agreements with other States, intergovernmental organisations and associations representing foreign fishing vessel operators and to allocate fishing rights to their vessels.²⁵² It further states that the total fishing rights allocated by access agreements should not exceed the total resources or amount of fishing allocation permitted to foreign fishing vessels by the applicable fisheries management and development plan.²⁵³ In addition access agreements are required to make appropriate provision for Flag State responsibility, or responsibility by organisations or associations.²⁵⁴ The Fisheries Act of Ghana has similar provisions.²⁵⁵

Papua New Guinea also sets out various principles governing access agreements in its *Fisheries Management Act*. It requires that foreign fishing vessels operate in the fisheries waters of Papua New Guinea under an access agreement and in accordance with a valid and applicable license issued under fisheries law.²⁵⁶ The legislation also gives authority to the Government of Papua New Guinea to enter into access agreements with States and regional economic integration organisations; fishing associations or similar body; a publicly incorporated company; or an individual.²⁵⁷ It adds that, the term of validity of an access agreement for foreign fishing vessels is not to exceed one year.²⁵⁸ Further, the *Fisheries Management Act* sets out the criteria to be used by Papua New Guinea in decision-making on access agreements and their negotiation,²⁵⁹ and requires that each signatory of an access agreement (State or fishing association) agrees to assume flag State responsibility and complies with and enforces Papua New Guinea laws.²⁶⁰

²⁵² Seychelles, *Fisheries Act 1987*, Part II, Section 6(1).

²⁵³ Seychelles, *Fisheries Act 1987*, Part II, Section 6(2).

²⁵⁴ Seychelles, *Fisheries Act 1987*, Part II, Section 6(3a).

²⁵⁵ Ghana, *Fisheries Act 2002*, Section 64.

²⁵⁶ Papua New Guinea, *Fisheries Management Act 1998*, Section 33(2).

²⁵⁷ Papua New Guinea, *Fisheries Management Act 1998*, Section 33(1).

²⁵⁸ Papua New Guinea, *Fisheries Management Act 1998*, Section 36(1).

²⁵⁹ Papua New Guinea, *Fisheries Management Act 1998*, Section 34.

²⁶⁰ Papua New Guinea, *Fisheries Management Act 1998*, Section 35(5).

7.5.5 Issues Associated with Fisheries Access Agreements

As previously discussed, access agreements were attractive to coastal States as a mechanism for managing foreign fishing as opposed to direct licensing because coastal States could secure recognition of their jurisdiction and rights, as well as for purposes of compliance and economic gain. For fishing States, access agreements provided an opportunity to remind coastal States of their obligation to give access to surplus fisheries resources that they had no capacity to harvest, and the need to minimise economic dislocation with historical fishing in waters now under national jurisdiction.²⁶¹ Over time however, access agreements have become more inclined to facilitating profitable fishing opportunities for DWFNs, securing fish supplies for their processing industries, and serving goals associated with the deployment of their vessels in foreign waters.²⁶² As a result, a number of inconsistencies with international fisheries instruments have resulted from the access agreements put in place by fishing States, namely, overexploitation, non-compliance, and transparency. Such inconsistencies do not ensure the sustainability of fisheries resources in the EEZ of coastal States.

7.5.5.1 Over-exploitation of Fisheries Resources

The terms of access agreements can lead to the over-exploitation of fisheries resources in developing coastal States and subsequently, the long-term decline of such resources. The LOSC requires coastal States to provide access to their surplus fisheries resources through such agreements.²⁶³ However, due to the lack of data on most fish stocks in developing coastal States, access agreements have often been negotiated without sufficient knowledge of the state of the fish stocks involved.²⁶⁴ Thus, access agreements are often concluded without the surplus of such fish stocks being determined.²⁶⁵

Further, such agreements may not take into account the overall fishing effort on the fish stocks concerned, hence, by introducing increased effort, such fish stocks are

²⁶¹ Les Clark, Perspectives on Fisheries Access Agreements: Developing Country Views, in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006) 73-102.

²⁶² Ibid.

²⁶³ LOSC, Art. 62(2).

²⁶⁴ MRAG, *Fisheries and Access Agreements*, DFID Policy Brief No. 6, <http://www.mrag.co.uk> (accessed 13 March 2011).

²⁶⁵ ADE-PWC-EPU, *Evaluation of the Relationship between Country Programmes and Fisheries Agreements* (2002). Final Report Prepared for European Commission.

exposed to over-exploitation.²⁶⁶ The lack of management capacity in most developing coastal States has also been recognised as a major cause of such over-exploitation by contributing to overcapacities of fishing fleets.²⁶⁷ Such overcapacities, if not reduced, aggravate the sustainability of fisheries resources like tuna.²⁶⁸ An additional concern about access agreements is that, many of them do not clearly define the limits on effort or catch. Under such circumstances, these agreements carry a risk of overfishing.²⁶⁹

7.5.5.2 Issues of Non-Compliance

The pressures exerted on fisheries resources of developing coastal States as a result of competing interests have intensified IUU fishing activities.²⁷⁰ Fishing vessels operating under access agreements have been known to engage in various activities which disregard the conservation measures adopted internationally, regionally and by coastal States. Contrary to the terms of the access agreement, such vessels may fail to report or under-report catches,²⁷¹ a problem which is further exacerbated by the inadequate MCS capacity in many developing coastal States. Additional problems include the use of proscribed fishing gear,²⁷² fishing in closed/protected areas,²⁷³ and unauthorised targeting, particularly of sharks by tuna longliners.²⁷⁴ Not only do these

²⁶⁶ Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views', in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006); Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008.

²⁶⁷ International Centre for Trade and Sustainable Development (ICTSD), *Fisheries, International Trade and Sustainable Development* (ICTSD, 2006) xi.

²⁶⁸ Daniel Pauly, Villy Christensen, Sylvie Guenette, Tony J Pitcher, U Rashid Sumaila, Carl J Waters, R Watson and Dirk Zeller, 'Towards Sustainability in World Fisheries (2008)' 418 *Nature* 689, 692.

²⁶⁹ United Nations Environment Programme (UNEP), *Analyzing the Resource Impact of Fisheries Subsidies: A Matrix Approach* (UNEP, 2004) 13. Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views', in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006).

²⁷⁰ Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008.

²⁷¹ Marine Resources Assessment Group Ltd. (MRAG), *Review of Impacts of Illegal, Unreported, and Unregulated Fishing on Developing Countries* (2005) 13. A Report for the UK's Department for International Development (DFID); Charlotte de Fontaubert and Indrani Lutchman with David Downes and Carolyn Deere, *Achieving Sustainable Fisheries: Implementing the New International Legal Regime* (IUCN, 2003) 9.

²⁷² Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008.

²⁷³ Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views', in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006); Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief, December 2008.

²⁷⁴ Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views', in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006).

activities result in economic losses of benefits by developing coastal States,²⁷⁵ but IUU fishing activities also have negative impacts on the sustainability of target species and the wider ecosystem,²⁷⁶ and also have negative consequences for food supply.²⁷⁷ The value of IUU fishing in Africa has been estimated at US\$0.9 billion.²⁷⁸

7.5.5.3 Lack of Transparency

Another criticism against fisheries access agreements is their limited transparency.²⁷⁹ The negotiation process of access agreements remains a confidential affair.²⁸⁰ In the case of the EU, such negotiations do not involve the civil society or other domestic fishing stakeholders,²⁸¹ while the agreements entered into with Asian governments or fishing associations remain private with no information whatsoever to the public.²⁸² This situation further weakens the bargaining power of developing coastal States, making it difficult for them to obtain adequate reporting on fish stocks and to determine the value of the fish stocks in question.²⁸³

²⁷⁵ Marine Resources Assessment Group Ltd. (MRAG), *Review of Impacts of Illegal, Unreported, and Unregulated Fishing on Developing Countries* (2005) 5. A Report for the UK's Department for International Development (DFID). The economic impact of IUU fishing on coastal States includes loss of value in terms of catches, revenue from landing fees, license fees, taxes and other levies, loss of income and employment, depressed demand for fishing gear, boats and equipment, and negatively impacting fish processing, packaging, marketing and transport. See Jasmine Hughes, *The Piracy-Illegal Fishing Nexus in the Western Indian Ocean* (2011). <http://www.futuredirections.org.au/admin> (accessed 13 March 2011).

²⁷⁶ Marine Resources Assessment Group Ltd. (MRAG), *Review of Impacts of Illegal, Unreported, and Unregulated Fishing on Developing Countries* (2005) 13. A Report for the UK's Department for International Development (DFID)

²⁷⁷ Brashares *et al*, 'Bushmeat Hunting, Wildlife Declines and Fish Supply in West Africa' (2004) 306 *Science* 1180, 1182.

²⁷⁸ Marine Resources Assessment Group Ltd. (MRAG), *Review of Impacts of Illegal, Unreported, and Unregulated Fishing on Developing Countries* (2005) 7. A Report for the UK's Department for International Development (DFID).

²⁷⁹ Marcos Orellana, *Towards Sustainable Fisheries Access Agreements: Issues and Options at the World Trade Organisation* (UNEP, 2008) 1; Heike Baumüller, *Tackling Subsidised Fishing: A Report on WTO's Ambitious Draft Text* (ICTSD, 2008). <http://www.globalsubsidies.org/> (accessed 13 March 2011).

²⁸⁰ Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views', in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006); Marcos Orellana, *Towards Sustainable Fisheries Access Agreements: Issues and Options at the World Trade Organisation* (UNEP, 2008); Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008.

²⁸¹ Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008.

²⁸² Ibid.

²⁸³ Marcos Orellana, *Towards Sustainable Fisheries Access Agreements: Issues and Options at the World Trade Organisation* (UNEP, 2008).

Orellana points out that the key challenge to transparency is attaching consequences to practices devoid of transparency, and emphasises that coastal States granting access to their EEZs need to establish effective monitoring schemes and to avail accurate data on the biological status of target and associated stocks.²⁸⁴ The secrecy that attends access agreements is also seen as an incentive for corrupt practices.²⁸⁵

The problems associated with access agreements have received much attention globally from the international community and world governments including by organisations such as the World Wide Fund for Nature (WWF) and the World Trade Organisation (WTO). Their considerations underscore the need for sustainable access agreements which are compatible with the current international fisheries instruments. WWF, in particular has set out the key principles for such agreements and related management plans, through the preparation of a handbook.²⁸⁶ These principles concern, inter alia, the total catch permitted to a DWFN;²⁸⁷ DWFNs sharing environmental costs; protection of the interests of small-scale artisanal fishers of the coastal State; flag State compliance by its vessels with coastal State laws and regulations; cooperation of DWFNS with the coastal State in carrying out research; and the need for the coastal State to ensure its MCS capabilities are adequate.²⁸⁸

The above shortcomings of access agreements bring to light the issues that a developing coastal State such as Kenya ought to be aware of and to consider if it is to adopt access agreements as the appropriate instrument for the development of its tuna fisheries. The issues that are central to sustainable access agreements are to ensure responsible fishing and sustainable fisheries. The changes in the approach of the European Community (EC) to access agreements represents current best practice in

²⁸⁴ Ibid.

²⁸⁵ Ibid; Andre Standing, *Corruption and Commercial Fisheries in Africa*, U4 Brief December 2008. For further reading concerning corruption in fisheries, See Martin Tsamenyi and Quentin Hanich, *Addressing Corruption in Pacific Island Fisheries* (2008). A Report Prepared for the IUCN PROFISH Law Enforcement, Corruption and Fisheries Project.

²⁸⁶ See Will Martin, Michael Lodge, John Caddy and Kwame Mfodwo, *A Handbook for Negotiating Fishing Access Agreements* (WWF, 2000).

²⁸⁷ The fishing capacity of such a fleet ought to be consistent with a sustainable level of fishing, based on scientific assessment of the state of stocks. See Will Martin, Michael Lodge, John Caddy and Kwame Mfodwo, *A Handbook for Negotiating Fishing Access Agreements* (WWF, 2000).

²⁸⁸ Will Martin, Michael Lodge, John Caddy and Kwame Mfodwo, *A Handbook for Negotiating Fishing Access Agreements* (WWF, 2000).

respect of responsible and sustainable fisheries.²⁸⁹ The EC has moved away from fisheries access agreements and is implementing Fisheries Partnership Agreements (FPAs) which aim to embrace the principles of sustainability.²⁹⁰ These agreements are the subject of the following section.

7.6 The European Union Fisheries Partnership Agreements

The European Union (EU) Fisheries Partnership Agreements (FPAs) provide EU vessels with access to fisheries resources in waters of third countries. Relative to other fishing States, the EU fishing fleet is the most prevalent in the Western Indian Ocean (WIO), with a significant allocation of financial investments.²⁹¹ FPAs are thus a very significant source of revenue for the coastal States with EU agreements. The FPAs are particularly important for the development of tuna fisheries in the African, Caribbean and Pacific (ACP) coastal States. These agreements are thus invaluable and highly relevant to the present thesis.

Most of the EU member States have long traditions as DWFNs.²⁹² As a major fishing power,²⁹³ the EU has negotiated and concluded bilateral fisheries agreements on behalf of the Community fisheries sector with third countries since 1979.²⁹⁴ Such agreements have been necessitated by the growing dependence of the EU on fish imports to fulfil the demands of the market.²⁹⁵ Hence, the EU adopted the Common

²⁸⁹ Les Clark, 'Perspectives on Fisheries Access Agreements: Developing Country Views', in *Fishing for Coherence: Proceedings of the Workshop on Policy Coherence for Development* (OECD, 2006).

²⁹⁰ Ibid.

²⁹¹ Ellen Laipson and Amit Pandya (eds), *Indian Ocean: Resource and Governance Challenges* (The Henry L. Stimson Center, 2009) 11; Elizabeth Havice, 'The Structure of Tuna Access Agreements in the Western and Central Pacific Ocean: Lessons for Vessel Day Scheme Planning' (2010) 34 *Marine Policy* 979, 983.

²⁹² These States include Spain, Portugal, UK, France, Poland, the Baltic States and Netherlands. <http://www.europarl.europa.eu/> (accessed 9 January 2011).

²⁹³ The EU is the third most important fishing power after China and Peru. See Michael Earle, 'Paying for Unsustainable Fisheries: where the European Union Spends its Money' (2006) in D. M. Lavigne (ed), *Gaining Ground: In Pursuit of Ecological Sustainability* (IFAW and University of Limerick, 2006) 228.

²⁹⁴ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007). The first EU fisheries agreement was with Senegal in 1979. The EU fishing fleet is one of the biggest in all of the earth's Oceans. It is the largest importer of fisheries products with a net import of over 60% and it has a seat in almost every RFMO, making the EU the biggest stakeholder in the global fish market. See also <http://www.fairpolitics.nl/> (accessed 10 January 2011).

²⁹⁵ Michael Earle, 'Paying for Unsustainable Fisheries: where the European Union Spends its Money' (2006) in D M Lavigne (ed), *Gaining Ground: In Pursuit of Ecological Sustainability* (IFAW and University of Limerick, 2006) 228. In 2002 one third of all fish exports went to the EU.

Fisheries Policy (CFP) in 1983 which is a comprehensive framework for the management of the fisheries sector with a presiding ethos to achieve a balance between the conservation of fish stocks and the maintenance of viable national fishing industries.²⁹⁶ The EU policy on fishing in third States is aimed at protecting the interests of the EU in the fishing sector. Therefore, traditionally, the aim of the EU fishing agreements has been; to supply the European fish processing industry with raw materials;²⁹⁷ to maintain fishing capacity outside EU waters; and to maintain EU employment.²⁹⁸

The scope of the Common Fisheries Policy extends to conservation, management and exploitation of living aquatic resources and aquaculture, as well as the processing and marketing of fishery and aquaculture products, where such activities are practiced on the territory of Member States or in Community waters or by Community fishing vessels or nationals of Member States.²⁹⁹ Fisheries access agreements have been a major component of the CFP since the adoption of the LOSC.³⁰⁰ Since its establishment in 1983, the CFP has undergone reforms in 1992 and 2002, with an aim of becoming more effective in achieving its main objective of preserving fish stocks.³⁰¹ The main areas of reform are with respect to the conservation of resources; protection of the environment from the impacts of fishing; fleet management; common organisation of markets; relations with third States; and control and enforcement.³⁰² The regulations adopted during the last reform of the CFP in 2002 are particularly significant for the

²⁹⁶ Marc Phillipe, 'The Common Fisheries Policy of the European Union- A Lesson in how not to make Policy' (1999) 19(2) *Politics* 61, 64.

²⁹⁷ The ACP-EU fisheries access agreements have generated a value-added of €694 million in the Member States through processing and marketing fish caught. See Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005) 8.

²⁹⁸ Agritrade, *ACP-EU Fisheries Relations and FPAs*. CTA Executive Brief (2009). <http://agritrade.cta.int/>; Anthony Acheampong, *Coherence Between EU Fisheries Agreements and EU Development Cooperation: the Case of West Africa* (1997). ECDPM working Paper No. 52. The ACP-EU fisheries agreements represent 35,000 jobs mainly in processing. See Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005) 8.

²⁹⁹ Council Regulation (EC) No. 2871/2002 of December 2002 on the Conservation and Sustainable Exploitation of Fisheries Resources under the Common Fisheries Policy, Article 2. <http://eur-lex.europa.eu/> (accessed 10 January 2011).

³⁰⁰ L Bartels, L A de la Fayette, H Davies and L Campling, *Policy Coherence for Development and the Effects of EU Fisheries Policies on Development in West Africa* (European Parliament, 2007).

³⁰¹ <http://ec.europa.eu/> (accessed 17 January 2011).

³⁰² Martin Tsamenyi, Mary Ann Palma, Ben Milligan and Kwame Mfodwo, *Fairer Fishing?: The Impact on Developing Countries of the European Community Regulation on Illegal, Unreported and Unregulated Fisheries* (Commonwealth Secretariat, 2009) 40. Economic Paper 86.

conservation and sustainability of tuna fisheries resources in developing coastal States. This is because the EU Fisheries Partnership Agreements were created as a result of the 2002 CFP reform.³⁰³

The basis for FPAs was established when the Agriculture and Fisheries Council adopted conclusions on an Integrated Framework for Fisheries Partnership Agreements (FPAs) with third countries in July 2004.³⁰⁴ FPAs incorporate economic, environmental and social objectives into access agreements.³⁰⁵ In contrast to the previous fisheries access agreements that the EU entered into with third countries, FPAs are designed to be negotiated and developed through a partnership approach,³⁰⁶ and they aim to contribute more effectively to sustainable fisheries management in the coastal State. FPAs are required to address the following issues; contribute towards rational and sustainable exploitation of the surplus of coastal States' marine resources; improve scientific and technical knowledge of the fisheries in question; contribute towards combating IUU fishing; contribute towards strategies for the sustainable management of fisheries as defined by the coastal State; facilitate the integration of developing coastal States into the global economy; and foster better global governance of fisheries.³⁰⁷

Of the EU's nineteen FPAs in force with third States, fifteen of them are with ACP States. Twelve of the agreements with ACP States are tuna agreements. The EU fisheries partnership agreements are thus significant for the development of the tuna industries of the African coastal developing States.

³⁰³ COM(2002)637 Final, *Communication from the Commission on an Integrated Framework for Fisheries Partnership Agreements with Third Countries* (Brussels, 2002). <http://www.fairpolitics.nl/> (accessed 10 January 2011).

³⁰⁴ COM(2002)637-2003/2034(INI), *European Parliament Resolution on the Commission Communication on an Integrated Framework for Fisheries Partnership Agreements with Third Countries*. <http://eur-lex.europa.eu/> (accessed 10 January 2011).

³⁰⁵ Elizabeth Havice, 'The Structure of Tuna Access Agreements in the Western and Central Pacific Ocean: Lessons for Vessel Day Scheme Planning' (2010) 34 *Marine Policy* 979, 983. Negotiations of FPAs commenced in 2003 with the first ones coming into force in 2006. See also MRAG, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report Prepared for the UK Department for Environment, Food and Rural Affairs and Department for International Development.

³⁰⁶ L Bartels, L A de la Fayette, H Davies and L Campling, *Policy Coherence for Development and the Effects of EU Fisheries Policies on Development in West Africa* (European Parliament, 2007).

³⁰⁷ Council of the European Union, 2599th *Meeting of Agriculture and Fisheries*, Brussels 19 July 2004.

7.6.1 ACP-EU Fisheries Partnership Agreements

The EU fishing operations with ACP States are conducted under bilateral agreements. Such agreements which are contingent upon financial compensation contribute immensely to government budgets in some of the States.³⁰⁸ The EU is also the main trading partner for ACP fisheries products and it accounts for at least 75% of ACP fishery exports by value.³⁰⁹ Table 4 lists the current ACP-EU Agreements.

³⁰⁸ Moustapha Kamal Gueye, *Uncertainties Loom in EU-ACP Fisheries Trade Relations*, International Centre for Trade and Sustainable Development (ICTSD) News and Analysis volume 11, No. 5 (2007). In some Pacific States, access fees account for 25% total government revenue, while in Guinea Bissau it is 40%. These high dependencies have resulted in overexploitation of tuna resources in some countries.

³⁰⁹ Negotiating Economic Partnership Agreements. <http://www.ecdpm.org/> (accessed 11 January 2011). The introduction of a collective European development policy has enabled the establishment of systems of trade preferences for groups of developing States with the EU. This relationship between the EU and such States derived from the historical association that the EU has had with them. Hence, the EU has established a framework for fisheries cooperation with the ACP coastal States. See Pitou Van Dijck and Gerrit Faber (eds), *The External Economic Dimension of the European Union* (Kluwer Law International (2000) 19; See also Martin Holland, *The European Union and the Third world* (Macmillan Publishers, 2002) 26. The European Treaty of Rome establishing the European Economic Community in 1957 expressed solidarity with the colonies and overseas countries and territories and a commitment to contribute to their prosperity. In this regard Article 131 of The Treaty of Rome provides for association for all dependencies in cooperation with the overseas countries and territories of the EU for purposes of promoting their economic and social development by stating that; “The purpose of this association shall be to promote the economic and social development of the countries and territories and to establish close economic relations between them and the community as a whole”..... “this association shall in the first place permit the furthering of the interests and prosperity of the inhabitants of these countries and territories in such a manner as to lead them to the economic, social and cultural development which they expect”.

Table 4. ACP-EU Fisheries Partnership Agreements³¹⁰

| Country | Period | Type | Total EU finance per Year) | Earmarked for Fisheries policy development |
|-----------------------|---------------|-------------|---|---|
| Cape Verde | 2007-2010 | Tuna | €385 000 | 100% |
| Comoros | 2005-2011 | Tuna | €390 000 | 60% |
| Cote d'Ivoire | 2007-2013 | Tuna | €595 000 | 100% |
| Gabon | 2005-2011 | Tuna | €860 000 | 60% |
| Guinea | 2009-2012 | Tuna | €1 050 000 first Year decreasing Following years | 100% |
| Guinea-Bissau | 2007-2011 | Mixed | €7 500 000 | 2 950 000 |
| Kiribati | 2006-2012 | Tuna | €478 400 | 30% to be Increased to 40% Second year Later to 60% |
| Madagascar | 2007-2012 | Tuna | €1 197 000 | 80% |
| Mauritania | 2008-2012 | Tuna | €86 million first Year decreasing Following years | 11 million €/yr Increasing in Future |
| Micronesia | 2007-2010 | Tuna | €559 000 | 18% |
| Morocco | 2007-2011 | Mixed | €36.1 million | 13.5 million € |
| Mozambique | 2007-2011 | Tuna | €900 000 | 100% |
| Sao Tome and Principe | 2006-2010 | Tuna | €663 000 | 50% |
| Seychelles | 2005-2011 | Tuna | €5 355 000 | 56% from 17.01.2008 |
| Solomon Islands | 2006-2009 | Tuna | €400 000 | 30% |

From table 4, it is seen that the EU has an important stake in the tuna fisheries of the WIO region, as all the EU agreements with the States in the region (Comoros, Madagascar, Mozambique and Seychelles) are tuna agreements. These agreements play an important role for the processing sector (tuna canning) which is dependant upon the supply from EU vessels for supply to the EU markets.³¹¹ Negotiations for access to the

³¹⁰ Fisheries Agreements with Countries Outside EU <http://ec.europa.eu/>(accessed 1 January 2011).

³¹¹ Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005). As the fishing fleets in the region are poorly developed, tuna used in the processing industry in the region is obtained from EU vessels in order to comply with Rules of Origin requirements of the EU market. Under the Cotonou Agreement, tuna exports to the EU must be wholly obtained in order to qualify for duty-free access to EU markets. The main criteria for originating products are registration and flag, ownership and crewing arrangements on the fishing vessels and factory ships. For further reading on Rules of Origin see, Lindsey

tuna resources of such States are conducted by the European Commission. The negotiations are based on the expressions of interest to fish in specific coastal States' waters which are communicated to national governments or to the Commission by European fishing companies.³¹²

The EU fisheries partnership agreements have a specific structure. The FPA consists of an all-encompassing agreement which establishes principles, rules and procedures governing economic, financial, technical and scientific cooperation with the coastal State; conditions governing access by Community vessels to coastal State waters; and arrangements for surveillance in coastal States waters. A protocol and annexes appended to the agreement detail the fishing opportunities and financial contribution of the EU. Fishing opportunities for tuna stocks are expressed in vessel numbers.

The EU-Seychelles agreement is an example of a tuna FPA. This agreement took effect from 18 January 2005 and has a duration of six years ending on 17 January 2011.³¹³ The Seychelles fisheries industry is the State's highest foreign exchange earner and the tuna cannery the largest employer.³¹⁴ Port Victoria in Seychelles is the principle tuna transshipment port in the region.³¹⁵ As the access rights for tuna are expressed in vessel numbers, the agreement provides access to 52 EC vessels (40 seiners and 12 longliners) from Spain, France, Italy and Portugal. The financial compensation for a total of 63,000 tonnes annually amounts to €4,095,000, and a specific amount of €1,260,000 annually allocated to support the Seychelles sectoral fisheries policy for promoting responsible fishing,³¹⁶ mainly through control, monitoring and enforcement

Block and Roman Grynberg, *EU Rules of Origin for ACP Tuna Products* (Commonwealth Secretariat, 2005), Beatrice Gorez, *ACP-EU Fisheries Relations: Towards Greater Sustainability*, A Report of the Meeting held at the ACP Secretariat, Brussels, 7-9 April 2003, OECD, *Globalisation and Fisheries* (OECD, 2007), OECD, *Economic Surveys: European Union* (OECD, 2009), OECD, *Liberalising Fisheries Markets Scope and Effects* (OECD, 2003).

³¹² http://ec.europa.eu/fisheries/cfp/index_en.htm (accessed 17 January 2011).

³¹³ Official Journal of the European Union, *Fisheries Partnership Agreement between the European Community and the Republic of the Seychelles* (22.2.2008). <http://eur-lex.europa.eu/> (accessed 11 January 2011).

³¹⁴ Philippe Michaud, *Experience from the bilateral fisheries access agreement, impact on the economy and implication for Seychelles of the outcome of the WTO mediation on the case of tuna between the EU and Thailand and Philippines*, Seminar on ACP-EU fisheries relations: towards a greater sustainability ACP Secretariat, Brussels, Belgium 7-9 April 2003.

³¹⁵ FAO, Country Profiles. <http://www.fao.org/> (accessed 17 January 2011).

³¹⁶ Official Journal of the European Union, *Council Decision of 12 February 2008 on the Signing on Behalf of the European Community, and the Provisional Application of the Agreement in the form of an*

activities.³¹⁷ The support for development of fisheries policy is considered very significant for dealing with issues concerning under-reporting of catches which are extremely crucial.³¹⁸ The EU vessel owners are required to pay a fee of €35 per tonne of tuna caught and to secure a license for seiners at €15,000 and longliners at €3000.³¹⁹ A 3 year protocol has been negotiated between Seychelles and the EU following the expiration of above FPA.³²⁰

7.6.2 Issues Associated with Fisheries Partnership Agreements

Although the EU has initiated reforms of its fisheries policy and adopted a new approach to fisheries access agreements with ACP States, the EU bilateral agreements continue to attract criticism.³²¹ Critics of these agreements claim that the fishing activities of EU fishing vessels in ACP States are not in conformity with its obligations to promote the sustainable utilisation of fish resources as required by the CFP and current international law. Instead, the excess fishing capacity of the EU fleets operating in these States with weak monitoring and enforcement capabilities contributes to overexploitation of fish stocks.³²² Further, the financial compensation from EU fishing agreements is not commensurate with the fishing opportunities provided.³²³ It is believed that, despite the EU responding to such criticisms through the implementation

Exchange of Letters on the Amendments to the Protocol setting out, for the Period from 18 January 2005 to 17 January 2011, the Fishing Opportunities and the Financial Contribution Provided by the Agreement Between the European Economic Community and the Republic of Seychelles on fishing off Seychelles. <http://ec.europa.eu/> (accessed 17 January 2011).

³¹⁷ Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005).

³¹⁸ Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005).

³¹⁹ Fisheries Agreements with Countries Outside EU <http://ec.europa.eu/> (accessed 1 January 2011). Purse seine-€21,000 per year, longliners-≤ 150GRT €4200 per year and longliners> 150GRT €3150 per year.

³²⁰ Official Journal of the European Union, *Council Decision of 20 December 2010 on the Signing on Behalf of the European Community, and the Provisional Application of the Protocol Setting out the Fishing Opportunities and the Financial Contribution Provided for by the Fisheries Partnership Agreement between the European Community and the Republic of Seychelles on fishing off Seychelles.* <http://eur-lex.europa.eu/> (accessed 18 January 2011).

³²¹ Criticisms have been made by social, environmental and development interests such as the Coalition for Fair Fisheries Agreements, World Wildlife Fund, European Parliament, NGOs, the European Court of Auditors and industry. See Beatrice Gorez, *ACP-EU Fisheries Relations: Towards Greater Sustainability*, A Report of the Meeting held at the ACP Secretariat, Brussels, 7-9 April 2003,

³²² S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007).

³²³ MRAG, *Fisheries and Access Agreements*. Policy Brief 6.

of FPAs, the basis of the agreements have remained the same,³²⁴ and that, a number of the provisions in the ACP-EU agreements do not ensure the long-term sustainability of tuna fisheries. The issues of concern include the sustainable utilisation of fisheries resources and environmental protection; monitoring, control and surveillance; and economic and social benefits to ACP States.³²⁵ The following section discusses these issues and the efforts of the FPAs to address them.

7.6.2.1 Impacts of EU Fishing Fleets on Fish Stocks in ACP States

It is difficult to estimate the actual impact of EU fishing fleets on ACP tuna stocks in the ACP-EU agreements. The fishing effort has often been underestimated, especially because the access agreement has not stipulated any catch limitation. Basing the fishing possibilities for access to tuna stocks on the number of boats has also made it difficult to obtain an accurate estimation of the fishing effort.³²⁶ Hence, it is difficult to estimate the real amount of catch and impact of the EU fishing fleets on the marine environment as a whole. ACP–EU agreements may therefore be based on such imprecise measurements of capacity.³²⁷ Although the LOSC requires the coastal State to provide access only to surplus fish stocks, it is likely that access agreements are being signed for stocks that are already overexploited.

The FPA addresses this issue by providing an exclusivity clause requiring all EU vessels fishing in the EEZ of ACP States to operate under the FPA which ensures that Community vessels are all engaged in fishing under the same terms and conditions, thus limiting EU effort.³²⁸ According to the CFP reforms, the EU undertakes to conduct

³²⁴ Coalition for Fair Fisheries Arrangements (CFFA), *The Future of Fisheries Partnership Agreements in the Context of the Common Fisheries Policy Reform* (2010); Norbert Probst, *The EU development Approach to Fisheries Cooperation- A presentation for the Expert Meeting on ACP-EU Fisheries Relations*, Brussels, 13-14 December 2004. The basis of fisheries agreements is the need for the EU to secure long term access to fisheries resources of third countries in order to maintain its fleet presence in these countries and international waters. Therefore, FPAs will always favour the commercial interests of EU DWFNs.

³²⁵ Nikki Sporrang, Clare Coffey and Kate Bevins, *Fisheries Agreements with Third Countries- Is EU Moving Towards Sustainable Development?* Institute for European Development Policy (2002); Technical Centre for Agricultural and Rural cooperation (CTA), *The Future of ACP-EU Fisheries Relations: Towards More Sustainability and Improved Social and Economic Well-being for ACP Coastal Communities* (2006)

³²⁶ Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005).

³²⁷ Ibid.

³²⁸ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007).

sustainability impact assessment studies on FPAs to ensure that they are negotiated, agreed and implemented appropriately. The EU will also carry out an evaluation of the impact that the FPA is likely to have on the local economy.³²⁹ Impact assessment studies are viewed as a useful tool in ACP-EU fisheries relations if undertaken through mutual participation of both parties, with the assessment of the various impacts being conducted by independent bodies.³³⁰ The results of such studies are to be shared with the ACP States as a gesture of partnership and transparency. Additionally FPAs base the revision of fishing opportunities upon the best available scientific advice, provided through a joint committee which is required to meet annually.³³¹

The EU-Seychelles FPA for example, provides the functions of the joint committee which include; monitoring the performance, interpretation and application of the Agreement and evaluating its implementation; providing liaison for matters of mutual interest relating to fisheries; forum for dispute settlement; and re-assessing the level of fishing opportunities.³³² According to the Agreement, the fishing opportunities are to be adjusted based on the recommendations and resolutions of the IOTC.³³³ The Agreement adds that; the Joint Committee shall meet once a year.³³⁴ In an EU-Seychelles Joint Committee meeting in 2009 the two parties amicably resolved a dispute regarding an increase in license fees sought by Seychelles. During this meeting the EU compensated for the excess tuna catches taken in 2006-2007.³³⁵

³²⁹ Ibid; Beatrice Gorez, *ACP-EU Fisheries Relations: Towards Greater Sustainability*, A Report of the Meeting held at the ACP Secretariat, Brussels, 7-9 April 2003. Impact assessments include; status of the coastal State budget and fisheries policy; international dimension of fisheries policy-consistency of coastal States policy and its international obligations; economic and financial analysis; and environmental analysis.

³³⁰ Beatrice Gorez, *ACP-EU Fisheries Relations: Towards Greater Sustainability*, A Report of the Meeting held at the ACP Secretariat, Brussels, 7-9 April 2003.

³³¹ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007)

³³² Official Journal of the European Union, *Fisheries Partnership Agreement between the European Community and the Republic of the Seychelles*, Article 9(1a-d). L/290/2.

³³³ Official Journal of the European Union, *Protocol Setting out the Fishing Opportunities and Financial Contribution Provided for by the Fisheries Partnership Agreement between the European Community and the Republic of the Seychelles*, Article 4(4). L345/3.

³³⁴ Official Journal of the European Union, *Fisheries Partnership Agreement between the European Community and the Republic of the Seychelles*, Article 9(2). L/290/2.

³³⁵ EC/Seychelles Fisheries Partnership Agreement, *Joint Committee* Victoria, Seychelles 5-6 February 2009. <http://ec.europa.eu/fisheries/> (accessed 19 January 2011). In a second meeting on 15-16 December 2009, the parties agreed on other issues including the calculation of fees, catch reporting system and implementation of the protocol.

7.6.2.2 Monitoring, Control and Surveillance

Most ACP States lack the national capacity to monitor and control the activities of DWFN fishing vessels, including those of the EU. They cannot therefore verify catches taken from their vast EEZs by such vessels. The ACP-EU tuna agreements create an additional incentive for EU vessel operators to under-report catches since the calculation of access fees is based on the quantities of tuna caught. By reporting less catches, the EU operators pay less.³³⁶ Under such circumstances, EU vessel operators often under-report tuna catches or make no reports at all including for by-catch.³³⁷ The extent of under-reporting and lack of sufficient data does not only make it difficult for such ACP States to evaluate their tuna stocks, but it also hinders them from designing the appropriate management plans for the sustainable management of tuna resources.³³⁸

FPAs have responded to this problem by incorporating various provisions to address issues concerned with catch reporting. As in the fisheries agreements, FPAs provide for observer programmes. The EU-Mozambique agreement for example, provides for IOTC-designated observers to be taken on board EU vessels operating in its waters.³³⁹ There is also increased provision for Satellite monitoring of vessels through VMS, and the Commission is committed to support the establishment of VMS protocols where conditions are insufficient, including other MCS activities under partnership actions.³⁴⁰ This will go a long way in assisting to locate fishing vessels and monitoring their activities. FPAs also provide transshipments restrictions, requiring such activities to be carried out only in ports. They also provide a forum for dialogue on stock status through a joint science committee, thus improving scientific knowledge of tuna stocks in ACP States. Most ACP States still require immense financial and

³³⁶ Beatrice Gorez, *ACP-EU Fisheries Relations: Towards Greater Sustainability*, A Report of the Meeting held at the ACP Secretariat, Brussels, 7-9 April 2003.

³³⁷ Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005); European Parliament, *Report from the Commission on the Monitoring of Member States' Implementation of the Common Fisheries Policy 2000-2002*, Brussels, 4.1.5005, COM (2004) 849 Final. The report states that; "monitoring of activities of fishing vessels operating beyond Community waters remains an issue which must be particularly targeted....much data is entirely absent for certain activities in waters where EU agreements with third parties have been concluded".

³³⁸ Beatrice Gorez, *ACP-EU Fisheries Relations: Towards Greater Sustainability*, A Report of the Meeting held at the ACP Secretariat, Brussels, 7-9 April 2003.

³³⁹ Official Journal of the European Union, *Fisheries Partnership Agreement between the European Community and the Republic of Mozambique*, Section 2, Chapter VII(1).

³⁴⁰ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007).

technical support to implement MCS schemes. If well implemented, MCS schemes would be instrumental in ensuring that the EU is held accountable for compliance in respect of VMS and catch reporting.

7.6.2.3 Developing the National Tuna Industry

From past experience of ACP-EU bilateral fisheries (“cash-for-access”) agreements, it has been shown that the bulk of the economic benefits accruing from such agreements go to the EU through value-added activities. According to a report on the evaluation of EU fisheries agreements, the benefits to the EU from value-added are at least three times that of ACP States.³⁴¹ Although some ACP States have provisions for compulsory landings, under-reporting of tuna catches and the poor monitoring capacity of such States make it difficult to prove how much has been caught in the EEZ of the State and how much should be landed.³⁴² The EU is however making attempts to enhance the benefits to ACP States through FPAs.

FPAs provide for the employment of local (as did access agreements) or ACP crew. The FPAs add a social clause stipulating minimum conditions for employment of crews on vessels and which must comply with minimum International Labour Organisation standards.³⁴³ In the EU-Mozambique FPA for example, EU vessel operators undertake to employ at least 20% of seamen of ACP origin, 40% of who should be nationals of Mozambique.³⁴⁴ The EU-Seychelles FPA requires each tuna seiner to take on board at least 2 Seychelles seamen.³⁴⁵ Most FPAs also include a provision for joint ventures. Under such arrangements ACP States are facilitated to integrate into the global economy and they also benefit from transfer of technology and know-how as well as capital.³⁴⁶ Hence, the ACP States can extract value and value-added from its tuna fisheries by activities such as building of a national fleet,

³⁴¹ IFREMER, *Evaluation of the Fisheries Agreements Concluded by the European Community* (1999).

³⁴² Beatrice Gorez, *Policy Study: EU-ACP Fisheries Agreements* (2005).

³⁴³ Ibid. In past access agreements, some EU vessels operators have failed to embark numbers of local crew as specified in the Agreement.

³⁴⁴ Official Journal of the European Union, *Fisheries Partnership Agreement between the European Community and the Republic of Mozambique*, Section 2, Chapter V(1). L331/44.

³⁴⁵ Official Journal of the European Union, *Protocol Setting out the Fishing Opportunities and the Financial Contribution Provided for by the Fisheries Partnership Agreement between the European Community and the Republic of Seychelles*.

³⁴⁶ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007).

developing or expanding the domestic processing sector, and increasing trade and exports in tuna products.³⁴⁷ Seychelles for example, has captured significant value-added through local landings and processing.

In respect of finance, the EU has widened the scope of the financial contribution for FPAs. The calculation of the financial contribution is most significant for tuna fisheries since it is not only based on access by the Community to the coastal State's fishing zone, but also on the Community's financial support for enhancing responsible fishing and the sustainable exploitation of fisheries resources in this zone. A portion of the fund is therefore directed towards the implementation of a sectoral fisheries policy.³⁴⁸ FPAs have thus moved away from just being purely commercial agreements to contribute more to sustainable fisheries management in ACP States.³⁴⁹

It is arguable that FPAs will resolve the issues of unsustainable fisheries especially since the lack of reliable data on stocks continues to exacerbate the problem of overfishing and the EU deems its investments in FPAs as commercial.³⁵⁰ Nevertheless, FPAs are still preferred for developing the tuna industry in developing coastal States as compared to the private agreements offered by other nations for various reasons. FPAs offer ACP States a fair price for tuna purse seine agreements at 13% of the catch value (normally 10%) and contribute more to local processing industries and trade compared to Asian Agreements.³⁵¹

For example, under the Japanese private agreements, PNG negotiated a fee of USD\$45-USD\$48 per tonne for seine vessels for period 2006-2007 access period and achieved a 6% return on catch value.³⁵² On the other hand, WCPO coastal States receive €35 per tonne in licence fees from EU seine vessel owners and an additional €65 per tonne from the Community which works out to about USD\$145 per tonne compared to

³⁴⁷ Ibid.

³⁴⁸ Ibid. A full analysis of the implementation of EU access agreements and FPAs is beyond the scope of the present thesis.

³⁴⁹ Ibid.

³⁵⁰ EU Policy Coherence for Development, *Fisheries partnership agreements: An empty shell for development?*, <http://www.eucoherence.org> (accessed 19 January 2011).

³⁵¹ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007). Eastern Asian Agreements offer 6% for longline.

³⁵² Greenpeace, *Taking Tuna Out of the Can: Rescue Plan for the World's Favourite Fish* (2007)13.

Japan.³⁵³ EU tuna seiners under this arrangement are more compliant with regard to catch declarations and entry/exit notices compared to their Asian counterparts.³⁵⁴

FPA's emphasise the partnership and offer opportunities for investment and transfer of knowledge; provide a reliable, constant source of income making it easier to plan budgets; and are a potential for immediate revenue source with minimal investment cost.³⁵⁵ Compared to other fishing agreements, FPA's are much more transparent as the text to the agreements, including fishing possibilities and financial contribution are available in public domain.³⁵⁶ In summary, FPA's are a better deal for development than the agreements that are offered by other States such as China,³⁵⁷ and they remain a vital part of improved governance of tuna fisheries in ACP States.³⁵⁸

7.6.3 The Option of a Fisheries Partnership Agreement for Kenya

The EU Fisheries Partnership Agreement has the potential to aid the development of Kenya's tuna industry and to contribute to the sustainability of its tuna fisheries. The potential investments from FPA's could provide a foundation for growth and development in Kenya's tuna fisheries and also improve fisheries management and trade. This potential lies with the fisheries relations that Kenya has with the EU as an ACP State. An FPA would enable Kenya to establish a dialogue with the EU, thereby providing an opportunity for Kenya to negotiate for financial and technical assistance from the EU which could directly benefit its tuna industry. There are a number of ways in which Kenya may benefit by signing an FPA. These benefits include financial contribution, monitoring and surveillance, and improved fisheries management.

³⁵³ Ibid.

³⁵⁴ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007). Technical Report (MRAG, CRE & NRI, 2007).

³⁵⁵ Ibid.

³⁵⁶ These can be accessed by the public from the EU website.

³⁵⁷ ADE, *Evaluation of the Relationship between Country Programmes and Fisheries Agreements*, Final Report (2002).

³⁵⁸ Andre Standing, *Reforms to European Common Fisheries Policy Good News for African Fisheries?* Institute for Security Studies (2010). http://www.issafrica.org/iss_today.php?ID=978 (accessed 21 January 2011).

7.6.3.1 Participation of the EU and Financial Contribution

The participation of the EU fishing fleet in Kenya's tuna fisheries through an FPA will provide Kenya with the means of extracting economic rents from its tuna resources which are currently considered underutilised. The current level of investment in Kenya's tuna fisheries is considered very low. Similarly, the low funding levels and slow disbursements to the Department of Fisheries contribute to the challenge of fisheries management as a whole.³⁵⁹ The financial contribution of an FPA in exchange for access to Kenya's tuna resources would provide a consistent and reliable source of revenue to the national economy and the fisheries sector, making it easier for Kenya to plan its budgets. The funds will also provide the necessary capital base for Kenya to develop and benefit from its tuna industry with minimal costs of investment. A key target for Kenya would be the development of a proper fishing port, landing, storage and processing facilities,³⁶⁰ to enable the operations of EU fishing vessels and attract other activities related to tuna fisheries.

7.6.3.2 Value-addition and Employment

The major economic benefits to be gained from an FPA are through value-added.³⁶¹ It would be to Kenya's advantage to capture such benefits from such an arrangement. Under an FPA, Kenya could consider enhancing its current tuna processing operations for value addition, and the use of port facilities by EU vessels as a direct means of obtaining sustainable benefits. The port of Mombasa in Kenya is strategically located in the Indian Ocean. Kenya could encourage the use of the port for transshipment or local landings. Through local landings, the activities of EU vessel operators in Kenya could contribute to revenue through taxes and other payments. The expenditure of EU vessels in port for the use of local services such as repairs, and supplies of fuel, water and food, would create employment for Kenyans.

In Seychelles for example, the port industry contributes an estimated at €57 million annually to the economy through vessel expenditure.³⁶² In Mauritius, a total of €140 million a year is generated in port revenue and a similar amount from tuna

³⁵⁹ Colin Barnes, *Business Plan for a National Fisheries Development Institution in Kenya* (2005).

³⁶⁰ Ibid.

³⁶¹ S F Walmsley, C T Barnes, I A Payne and C A Howard, *Comparative Study of the Impact of Fisheries Partnership Agreements* (2007).

³⁶² Ibid.

processing export earnings.³⁶³ Local landings could also supply national fish markets, thereby creating additional economic benefits to the State. The Kenyan processing sector would also be assured of a steady supply of raw materials for their operations from EU vessels, making their products acceptable to the EU and other international markets. Increased fish exports would provide a significant source of foreign exchange for Kenya.

Another benefit to Kenya is the possibility for employment of local crew upon EU vessels. Through negotiations with the EU, a number of Kenyan seamen can be employed to work under internationally acceptable standards (ILO standards).

7.6.3.3 Improved Fisheries Management

Although Kenya licences foreign fishing vessels to operate in its EEZ, the status of the tuna resources is not known. A starting point for a Kenya-EU FPA would be for the EU to provide accurate tuna catch and effort data of all their operations in Kenya's EEZ.³⁶⁴ Most of the purse seiners operating in Kenya's EEZ belong to EU Member States, mainly from Spain. Not only would such information give a clear indication of the feasibility of such an arrangement but it would also be a good gesture of the partnership approach being taken by the EU in an FPA.³⁶⁵ As the current status of tuna resources in Kenya is not known, such data would be instrumental in providing guidance on the fishing opportunities that may be negotiated for the EU.

An FPA could provide Kenya with the possibility to enhance the sustainability of its tuna resources. This is because FPAs provide some level of regulation and control on fishing vessels and support sustainable fisheries. First, the impacts of EU fishing on Kenya's tuna resources can be limited by the exclusivity clause provided in an FPA, which restricts total EU effort in the EEZ. Secondly, the levels of fishing are to be based on scientific advice and the status of the tuna stocks is to be reviewed annually through a scientific committee. Thirdly, a proportion of the financial contribution from the EU will be put towards the development of fisheries policy. Such funding can support the formulation of a sustainable tuna management strategy for Kenya. As the present

³⁶³ Greenpeace, *Taking Tuna Out of the Can: Rescue Plan for the World's Favourite Fish* (2007)18.

³⁶⁴ The EU has operated in Kenya since 1996.

³⁶⁵ Knowledge of the current status of the tuna stocks is inadequate. See Colin Barnes, *Business Plan for a National Fisheries Development Institution in Kenya* (2005).

management of tuna resources in Kenya is not based on proper evaluation of the tuna stocks or catch controls, there will be a need for complementary support in addition to an FPA if Kenya is to improve in its fisheries management. Kenya also needs expertise and technical support for effective management of its tuna fisheries. At present, Kenya has no mechanism for monitoring the activities of DWFNs in its EEZ. An FPA can provide a framework for VMS, observers and restrictions on transshipments for improving monitoring and compliance in Kenya's EEZ.

Overall, an FPA has the potential to contribute to the development of the tuna industry in Kenya. However, if Kenya opts for this strategy, the FPA alone will not necessarily guarantee the development and sustainable management of its tuna fisheries. Kenya will need additional investment in the tuna fisheries and to develop its capacities in diverse areas. An FPA provides the opportunity for Kenya to leverage support for an approach that can help in laying a foundation for the management and development of its tuna industry. The outcome of a Kenya-EU partnership agreement depends primarily on how effectively Kenya can negotiate for fair terms that would be responsive to its needs, concerns and obligations in respect of tuna.

As tuna is a highly migratory species, it is subject to exploitation by a number of States within the total distribution range of its migration. States within this distribution range lose the potential economic benefits from these shared stocks when they fail to optimally utilise them in their EEZs. These benefits are further reduced by other States in the region utilising the tuna stocks. Currently, there are other States in the WIO region such as Seychelles, Comoros, Mozambique and Madagascar harvesting the tuna stocks under FPAs. Kenya loses an opportunity to benefit economically from these tuna resources if it does not employ a mechanism to utilise them optimally.

It has been pointed out previously that, although Kenya has potential tuna resources in its EEZ, its capacity to develop its tuna resources is inadequate. Similarly, Kenya's capacity to monitor or control the activities of foreign fishing vessels in its EEZ is inadequate. The sustainability of its tuna resources cannot therefore be assured. Currently, Kenya's tuna resources are being exploited by DWFNs without commensurate benefits. It is therefore logical for Kenya to seek improved ways to collaborate with DWFNs in order to establish mechanisms that would enable it to obtain the full benefits from the foreign exploitation of its tuna stocks.

A key advantage for Kenya is its sovereign rights to the utilisation of the tuna resources in its EEZ. These rights enable Kenya to adopt the appropriate development mechanisms in order to derive economic benefits from its tuna resources. As the utilisation of Kenya's tuna resources is governed by the LOSC, such mechanisms need to be consistent with the relevant international requirements of law. Hence, it is necessary for Kenya to take into account the sustainability and viability of its tuna stocks, if it is to meet its international and regional commitments in respect of tuna.

7.7 Conclusion

This chapter reviewed two main approaches to tuna industry development; domestic tuna industry development and fisheries access agreements. Concerning domestic development of the tuna industry, it is shown that a number of enabling factors such as good governance, adequate investment capital, raw materials, skilled labour, equipment, infrastructure, and ready markets are required. It is also necessary for Kenya to accord recognition to the domestic development objectives in the relevant national policy documents. In respect of fisheries access agreements, it is essential that Kenya ensures responsible fishing and sustainable fisheries by entering into agreements that are consistent with international fisheries instruments.

Notably, Kenya belongs to the group of ACP States and already enjoys a relationship with the EU. Hence, if Kenya opts for the EU agreement, the EU Fisheries Partnership Agreement framework could provide the technical support and necessary funding to initiate development of Kenya's tuna fisheries. Kenya could be assured of stable and better prices for its tuna fisheries products through FPAs as opposed to direct licensing arrangements. As with the other strategies of tuna development discussed in this chapter, the EU fisheries Partnership Agreement will only facilitate the development of Kenya's tuna industry and is not to be seen as the answer to all the sustainable issues of the fishery.

Overall, Kenya is at a risk of losing the potential economic benefits from its tuna resources if it does not adopt enhanced strategies for developing its tuna industry, since a number of States in the WIO region are harvesting the same tuna stock under the European Union FPAs and with other partners.

CHAPTER 8

CONCLUSION

The LOSC changed the relations between coastal States and DWFNs significantly by establishing the EEZ. As the LOSC recognised the rights of the coastal State over the fisheries resources in the EEZ, many developing coastal States seized the opportunity to gain economically from the fisheries resources in their EEZs, while DWFNs, on the other hand, had to pay for access to resources which they had freely obtained in the past under the freedom of the high seas. By securing fishing opportunities in the waters of developing coastal States, DWFNs have maintained the tuna supplies for their industries. The growing demand for tuna has however led to an increase in global catches, thereby posing a threat to the long-term sustainability of tuna stocks and having adverse effects on the wider ecosystem. International fisheries instruments impose obligations upon States to ensure the sustainability of tuna stocks and to cooperate in their conservation and management.

This thesis sought to examine the international legal requirements for managing tuna in the context of Kenya, in order to ascertain the national implementation actions of these requirements. The introductory chapter of this thesis highlighted the global significance of tuna and the sustainability concerns in tuna fisheries. It also provided an overview of the tuna fisheries of Kenya. This chapter was followed by discussions on the legal framework for the management of tuna fisheries and the measures necessary for ensuring their long-term sustainability in the international, regional and national context.

In chapter 2, the biological characteristics of tunas and the relevant international legal instruments governing the management of tuna were examined. The relevant legal instruments included the LOSC and the UN Fish Stocks Agreement which are binding, and the FAO Code of Conduct which is voluntary. It was established that tunas migrate long distances for the purposes of feeding and reproduction, and that such migratory movements may occur between the EEZs of two or more States, or between the EEZ and the high seas. For this reason, tunas have been categorised as highly migratory species under the LOSC. Such migratory behaviour has implications for the management of tunas. Thus, in addition to tuna being subject to coastal State authority in the EEZ, the LOSC also requires States to conserve and manage tuna cooperatively

across their migratory range.¹ The LOSC has granted coastal States significant access and authority to the fisheries resources of the EEZ, including tuna. The LOSC equally imposes corresponding conservation and management responsibilities in respect of [tuna], requiring States to determine the allowable catch;² contribute and share data;³ and ensure compliance of the measures they have adopted by instituting enforcement mechanisms.⁴ The coastal State is also obliged to optimally utilize the [tuna] resources in its EEZ,⁵ by giving other States access to the surplus of the allowable catch for which it has no capacity to harvest.⁶

The UN Fish Stocks Agreement supplements the LOSC with respect to the conservation and management of highly migratory and straddling fish stocks like tuna, and also in respect of the duty to cooperate on the high seas. The UN Fish Stocks Agreement provides the mechanisms that give effect to the duty to cooperate as required by the LOSC, and places RFMOs in a central position in terms of its implementation.⁷ Thus, States are required to cooperate through RFMOs to achieve improved conservation and management of tuna resources.⁸ To ensure the conservation and management of tuna stocks in their entirety, the UN Fish Stocks Agreement requires states to adopt compatible conservation and management measures across jurisdictional zones, in the framework of the cooperative mechanisms it has provided.⁹ The RFMO that is dedicated to the sustainable management of tuna resources in the Indian Ocean is the Indian Ocean Tuna Commission (IOTC).

Chapter 3 provided a background to the governance framework for tuna resources of the Indian Ocean and also gave a historical account of the management of the Indian Ocean tuna fisheries. It reviewed the process of establishing the IOTC under the FAO constitution,¹⁰ and discussed the relevant provisions of the *Agreement for the*

¹ LOSC, Art. 63 and 64.

² LOSC, Art. 61 (1).

³ LOSC, Art. 61 (5).

⁴ LOSC, Art. 73 (1); *UN Fish Stocks Agreement*, Art. 21 and 22.

⁵ LOSC, Art. 62 (1).

⁶ LOSC, Art. 62 (2).

⁷ The United Nations Fish Stock Agreement, <http://www.fao.org/> (accessed 28 February 2011).

⁸ *UN Fish Stocks Agreement*, Art. 8(2).

⁹ *UN fish Stocks Agreement*, Art. 7(2)

¹⁰ J J Kambona and S H Marashi, *Process for the Establishment of the Indian Ocean Tuna Commission*, FAO Fisheries circular No. 913 (FAO, 1996).

Establishment of IOTC. The chapter identified the relevant aspects of international fisheries law that have not been addressed by the *IOTC Agreement*, and which hinder the effectiveness and efficiency of the IOTC, namely, the precautionary and ecosystem-based approaches. Another concern is the limitation on participation of entities in the IOTC, which excludes Taiwan, a major distant water fishing entity operating in the Indian Ocean. By limiting the participation of Taiwan in its work, the IOTC prevents Taiwan from discharging its obligation to cooperate as required by the UN Fish Stocks Agreement. An additional issue of concern is the IOTC affiliation to FAO, particularly in respect to the IOTC budget. This relationship is believed to be impacting negatively on the efficiency of the work of the IOTC.¹¹

Chapter 4 examined the conservation and management measures adopted by the IOTC in respect of the tuna stocks under its purview, and assessed the consistency of such measures with the provisions of the LOSC, the UN Fish Stocks Agreement and the FAO Code of Conduct regarding the determination of allowable catch, data contribution and sharing, and compliance and enforcement. The inadequacies identified in the IOTC measures relate to catch quotas and TACs; decision-making, conservation of non-target species and species associated with or dependent upon tuna; and MCS. The chapter also established that the efficiency and effectiveness of the IOTC is affected negatively by poor compliance by Members and lack of cooperation by non-Members regarding data contribution.

Chapter 5 provided a discussion of Kenya's legal, policy and institutional framework for managing fisheries. It also discussed the national development policies and fisheries sector plans of Kenya, and examined the legislative practices of States in respect of tuna. The key findings in this chapter are that, the Fisheries Act has no provisions designed to establish specific management strategies for the management of Kenya's tuna resources, and that fisheries management issues have not been satisfactorily addressed in the framework of Kenya's national development plans. Hence, the interests of the fisheries sector in Kenya have not been given priority. The chapter proposed ways in which the fisheries legislation could incorporate implementation of management approaches that respond to the unique biological characteristics of tuna, such as management and development plans for designated

¹¹ Anonymous, *The Report of the IOTC Performance Review Panel* (IOTC, 2009).

fisheries. It also proposed ways in which policy-makers can be made to recognise the value of tuna fisheries in order to enhance management performance.

Chapter 6 analysed Kenya's legal and policy framework relative to the conservation and management of the tuna resources in its jurisdiction, in order to assess its consistency with international and regional obligations. The chapter demonstrated that there are gaps in Kenya's regulatory framework with respect to fishing capacity, catch limits, conservation of non-target species, data collection, and various compliance and enforcement measures. There is a need for legislative reform to modernise the legal arrangements for fisheries in Kenya in order to meet the requirements of international instruments concerning these aspects. The chapter has proposed ways in which the current fisheries regulations could be enhanced so that they remain consistent with Kenya's obligations under international law for managing tuna.

Finally, chapter 7 reviewed Kenya's efforts to utilise its tuna resources to date and demonstrated that the tuna industry in Kenya is not well developed. The chapter further examined strategies that could be adopted by Kenya, for the sustainable utilisation of tuna resources under its jurisdiction, as well as related issues and challenges. Lessons were drawn from the diverse experiences of other States, particularly the Pacific Island States, in order to provide guidance for Kenya. The approaches discussed in this chapter included domestic tuna industry development and fisheries access agreements, including the European Union Fisheries Partnership Agreements (FPAs).

Overall, this thesis set out to assess Kenya's national response to international obligations for managing tuna fisheries. It was argued that Kenya's legal and policy framework would only be considered adequate if it fully incorporated the appropriate provisions of the relevant international instruments relating to the management of tuna stocks. Thus, Kenya would need to satisfy three sets of criteria provided by the LOSC, the UN Fish Stocks Agreement and the FAO Code of Conduct. The first criterion relates to the determination of the TAC. The second type of criterion concerns the contribution and sharing of tuna fisheries data. The third set of criteria comprises the implementation of compliance and enforcement mechanisms including flag State duties, port State and other MCS measures such as VMS, boarding and inspection, and observer programmes.

The analysis of Kenya's regulatory regime as well as the fisheries conservation and management practices demonstrated that Kenya has not fully met its international

obligations in relation to the management of tuna, since it has not met most of these criteria. The measures adopted by Kenya for managing its tuna resources are not fully consistent with the measures adopted under international fisheries instruments and the IOTC. The thesis identified particular areas where Kenya's practice is not consistent with international law. First, Kenya's fisheries laws neither provide for the total allowable catch nor fishing capacity. Second, the regulation of fisheries data remains incomplete both for tuna and non-target species. Third, the compliance and enforcement regime is inadequate.

At present, the management regime in Kenya does not adequately regulate fishing capacity in the EEZ, which exposes the tuna resources to the possibilities of overexploitation. In connection with this Kenya has not implemented the IPOA-Fishing Capacity. The regulatory provisions on specific conditions upon which foreign fishing licenses may be issued are largely absent, making it more difficult for fishing capacity to be monitored. The problem is further compounded by the lack of provisions on catch limits. This omission in Kenya's legislation fails to ensure the sustainability of its tuna resources.

Concerning non-target species, Kenya's fisheries laws do not provide for seabirds and sharks. Kenya has not implemented both the IPOA-Seabirds and the IPOA-Sharks. The protection of marine turtles also remains incomplete and the penalty for violations on the capture of marine turtles does not provide an effective deterrent. In this respect, Kenya has not implemented measures in accordance with the *FAO guidelines to Reduce Sea Turtle Mortality in Fishing Operations* in respect of tuna fisheries. Such provisions are necessary in order to reduce the ecosystem effects from incidental mortality of non-target species in tuna fisheries, and for Kenya to fulfil its international obligations in this regard.

The current data management system for tuna fisheries in Kenya does not ensure the accuracy and quality of data. The data-related measures that Kenya has adopted do not clearly establish the need for quality, accuracy and timeliness as required by international law. This hinders the monitoring of the tuna catches from Kenya's EEZ. Further, there are no data reporting requirements for seabirds and sharks as required by the IOTC. These omissions in Kenya's legislation influence the reliability of data essential for stock assessments and decision making for management purposes in tuna fisheries.

In respect of compliance and enforcement mechanisms for vessels operating in the EEZ, Kenya's fisheries regulations have been directed mainly at foreign fishing vessels. Although Kenya has established the relevant regulations for foreign fishing vessels, it has failed to adopt and implement measures concerning the maintenance of a ships log against vessels flying its flag. Similarly there are no requirements for Kenyan-flagged vessels to provide a call sign and country of registration of the vessel as required by the IOTC. In addition, Kenya has failed to prohibit the operation of fishing vessels not entered in the IOTC record of fishing vessels. These are significant gaps in Kenya's implementation of conservation and management requirements for tuna fisheries. Similar gaps are also apparent in Kenya's provisions relating to port States, requiring vessel identification information prior to entry into port; terms and conditions for decision making in respect of port entry and what would constitute denial of entry; and conditions for the use of ports. There are no regulations on the inspection of vessels in port and the procedures to be followed during such inspections. Similarly, the procedures for handling Kenyan-flagged vessels when in port are not provided.

The Kenyan fisheries regulations have failed to provide for VMS requirements for Kenyan-flagged vessels and national observer requirements. Additionally, Kenya does not prohibit transshipment by tuna fishing vessels found to be in violation of its conservation and management measures or those vessels that have undermined the IOTC conservation and management measures. These gaps in Kenya's legislation jeopardise its ability to monitor the activities of fishing vessels in respect of tuna catches, and to enhance compliance by such vessels to the conservation and management measures adopted by both Kenya and the IOTC.

As noted in chapter 5, the fisheries sector in Kenya, and particularly the marine fisheries have not been prioritised by the State for development since Kenya gained independence in 1963. Aside from Kenya's technical, financial and institutional incapacities, it is likely that the low priority given to the fisheries sector has contributed to Kenya's failure to fully implement international fishery laws. It is notable, however, that though most of the requirements of international law are not nationally legislated, some of Kenya's management practices respond to international fishery instruments. In recent years, Kenya's policy and institutional framework for fisheries has evolved and recognises that the management of tuna fisheries is subject to international legal rules, and emphasises the need to lobby for the implementation and translation of the relevant

provisions of the LOSC into national policy and legislation in order for tuna fisheries to be utilised sustainably. The establishment of the Ministry of Fisheries Development in 2008 presents an opportunity for the sector to assert itself. Kenya also recognises the need for international cooperation to manage its tuna resources, hence its participation in the IOTC.

Consistent with the objectives of this thesis, a number of recommendations have been made resulting from the analysis of Kenya's fisheries management practices and its national legal and policy framework for managing tuna fisheries. These recommendations could be incorporated under the *Fisheries Act 1989* as amendments, or as measures adopted under a legislated Kenyan National Tuna Fisheries Management Plan.

A number of factors limit the effective utilisation of tuna resources in Kenya, making it difficult for Kenya to meet its international requirements for optimum utilisation of its tuna stocks. Among such factors is Kenya's inadequate capacity to develop its tuna resources, and to monitor or control the activities of foreign fishing vessels in its EEZ. The current exploitation of Kenya's tuna resources by DWFNs without commensurate benefits and without effective enforcement does not ensure the sustainability of such resources. For these reasons, chapter 7 emphasised the need for Kenya to take advantage of its sovereign rights to utilise the tuna resources in its EEZ by employing any of the strategies proposed. Kenya could therefore develop a domestic tuna industry, or enter into access agreements in order to promote the development of its tuna industry, while contributing to the sustainability of its tuna fisheries.

As a Party to the LOSC and the UN Fish Stocks Agreement, Kenya has accepted the opportunities as well as the responsibilities and obligations of establishing an EEZ. Kenya can determine who will exploit the tuna resources in its EEZ and also limit such exploitation to sustainable levels, with the hope of obtaining long-term economic benefits from its tuna resources. Kenya also has a responsibility under international law to ensure the sustainability of its tuna resources. It is entirely necessary for Kenya to respond to its international obligations in this respect. Kenya stands to gain by conserving and managing its tuna resources.

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APPENDIX 1

Republic of Kenya's National Oceans and Fisheries Policy, 2008

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